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ABSTRACT

A social studies unit and student workbook explore changes in land use that have occurred over time in a semiarid area of eastern Australia, the Back Lachlan District. Part of the "outback," the District consists of a huge level plain with low rainfall, only one river, and vegetation ranging from timber to grass and shrub. Chapter I elaborates on its physical characteristics. Chapter II explains that it was inhabitated by Aborigines from 30,000 years ago until the 19th century. They roamed in small nomadic groups, looking for edible plants and animals, camping near water. They had a Stone Age technology. Chapter III characterizes the white pioneer grazing stage from 1820-1866 as a period of increasing cattle grazing. Graziers moved cattle into the District from northern breeding areas to use it as a fattening area before the stock was driven south to market. Chapter IV relates a stage of deteriorating environmental conditions from 1866-1900 due to overgrazing. sheep raising replaced cattle grazing, expensive technological apparatus were required, operating costs increased, rabbits overran the land, and the human population decreased. Chapter V describes 20th century subdivision of the sheep-raising properties into smaller single-family farms. The government has introduced controlled stocking policies to prevent further environmental deterioration. The student workbook contains activities and questions to enhance student comprehension of each chapter. (AV)

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CHANGING LAND USE:

THE BACK LACHLAN DISTRICT OF AUSTRALIA

A Case Study of Land Use in a Semi-Arid Area

Kevin Laws

SO 011 003

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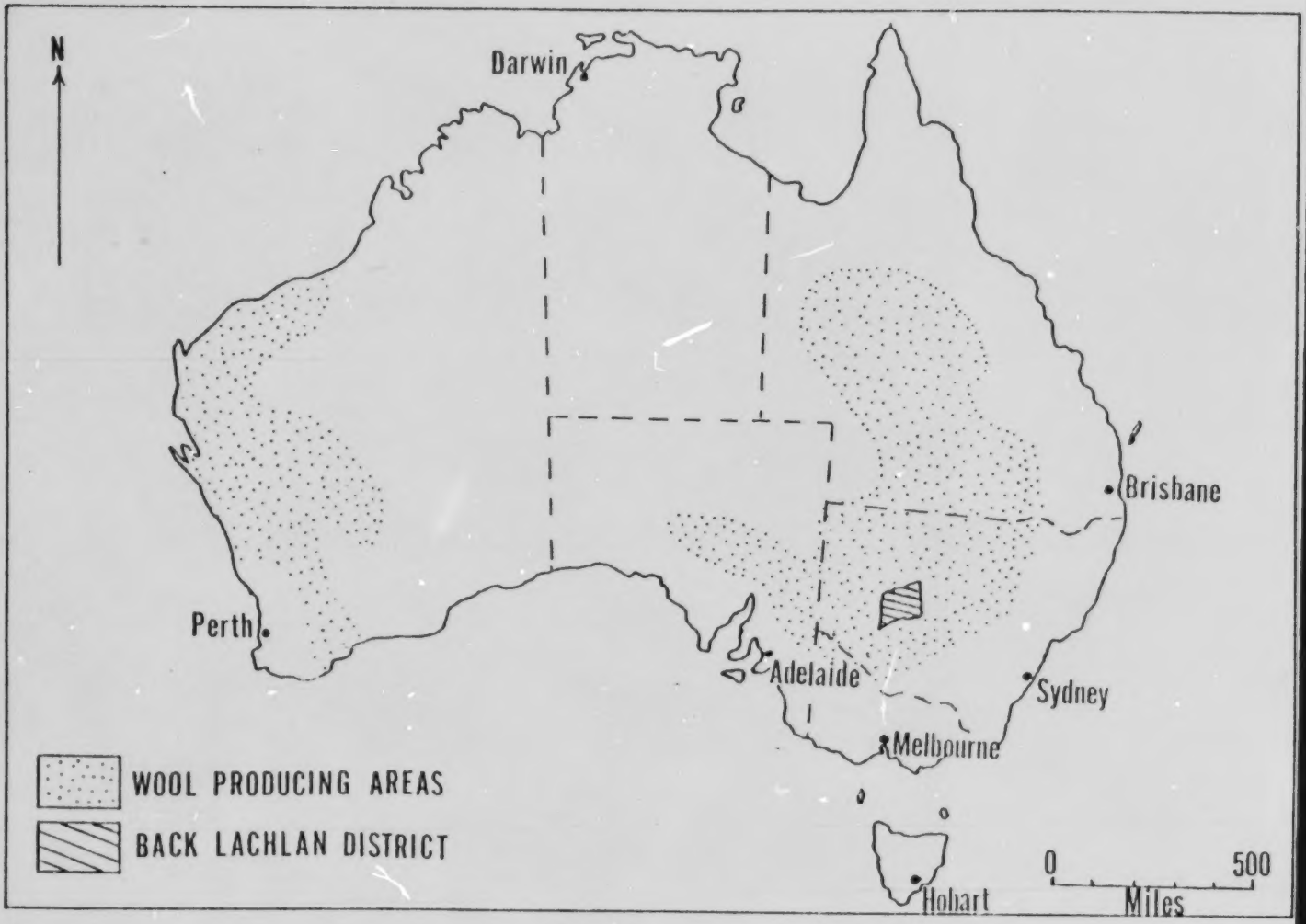

AUSTRALIA

Major Wool Producing Areas and the Back Lachlan District

CHANGING LAND USE:
THE BACK LACHLAN DISTRICT OF AUSTRALIA

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FOREWORD

To the Teacher and Student - Please Read

This foreword is an explanation of this unit in historical geography. It also tells you the way the material is presented and something about the work of the Geography Curriculum Project.

Historical Geography and Sequent Occupance. The idea behind the unit is that man changes the way he uses his environment over time. Some of this change occurs as a result of changes in the physical environment. But most of the changes in land use result from changes in man's culture. If we look at the same area of land in Year A and then come back and look at the same area in Year B, say 500 years later, we will find that the area is not the same. Forests have been cleared, roads built, cities developed, as in the United States. In other areas of the world, however, a reverse process is often found: great cities have been abandoned, and the sands of the desert or the growth of the jungle covers the streets where people once worked and played.

The study of changing land use through time is a study of history and geography. Geographers and historians who are interested in changing land use are called historical geographers. As you study this unit, therefore, you are working in an approach called historical geography.

A special approach that you will be using in this unit is called sequent occupance. As man occupies the land, he changes the land and its use. As these change from time to time, one can look back and see certain sequences, stages or definite time periods in which man used the land in a certain way. Look in your workbook on the last page and you will find a chart. At the top are four stages, or sequences, which you will study in the Back Lachlan District unit. The sequences vary with the area. On the left side of the chart are listed certain elements or factors which bring about changes (which are reflected in the different time periods). These factors are cultural factors. Changes in these elements are the causes which bring about the changes in land use in the different periods. Sequent occupance is thus a special type of historical geography in which we study the same area, the changes in culture, and the changing land use in the area by certain time periods.

Concept Acquisition and Transfer. The way this material is presented emphasizes concept acquisition and transfer. Each time period of sequent occupance presents the major cultural

factors bringing about changes in land use. These big ideas, or concepts, form the building blocks of the unit. These ideas are presented in a straightforward, narrative style called exposition. The task of the student is to learn these major concepts, so that he can transfer their use to other situations. Technology, for example, does not just work in the time periods or places studied in this unit, but applies to any other time and place. Thus this unit emphasizes practice and application of the ideas presented in the text. A workbook has been provided to assist you with concept acquisition, practice and transfer.

The Geography Curriculum Project. The Geography Curriculum Project, University of Georgia, offers the teacher of social studies structured materials in geography. These units are topically organized to reflect selected major concepts such as transportation, habitat, place, location, resource, production, spatial arrangement, region, urban settlement, rural settlement, population, and man-land relations.

This unit on CHANGING LAND USE: THE BACK LACHLAN DISTRICT by Kevin Laws, provides an explicit unit in sequent occupance dealing with an area of semi-arid land and its environment. The conceptual structure is oriented to helping students understand the past in order to better understand the present use and complexities of such an area. Although it is described as a unit in historical geography, the unit is multidisciplinary in its use of ideas. It thus contributes to the acquisition of social studies knowledge, whether offered in a class called geography, history, or social studies.

This is one of several units in historical geography and sequent occupance written by Mr. Laws for the Geography Curriculum Project. The other units in this series are:

Changing Land Use: Peachtree Street, Atlanta. A Case Study in Sequent Occupance in an Urban Environment

Changing Land Use: The Fens of England. A Case Study in Land Reclamation

Changing Land Use: Cyrenaica, Libya. A Case Study in Regional Decline and Revival

Marion J. Rice
Project Director

May, 1978

INTRODUCTION

Australia is known throughout the world as a country where strange animals live. The kangaroo, emu, koala bear and platypus are some of the animals which are found in Australia and nowhere else in the world. Australia is also famous for the production of fine wool and has many large sheep stations. Few Australians, however, have ever seen the strange native animals in their natural habitat or visited areas where sheep are raised for their wool. Most of the people who populate this huge continent live in a few major cities located near the coast. The vast, dry isolated areas where sheep are grazed and kangaroos roam are many hundreds of miles from these cities (Figure 1).

In this unit you will study one part of eastern Australia where sheep are raised for their wool. This area is called the Back Lachlan District and you will trace the changes in land use that have occurred from the time of the earliest human habitation to the present day. You might be able to identify the changes that have occurred in your own area since it was first settled and make comparisons with the Back Lachlan District.

To help you understand the changes that have taken place, four stages of occupation have been identified. Each stage is different from the others in some way.

The first stage of occupance discusses the land use of the district during the time it was inhabited by Aborigines, who were the earliest human inhabitants of the continent. The second stage begins with the coming of white settlers. These people brought about a dramatic change in the way in which the land was used because they were not interested in just finding enough food and water to survive, as the Aborigines had done. The first white settlers wanted to use the land to make money. During the third stage, white settlers continued to inhabit the area. The physical environment, however, was not clearly understood at that time and changes occurred in the types of plants that grew in the area. Gradually the landscape changed until dust storms became frequent and animals died from lack of water and food. The

fourth stage brings us to the present day. The land use is not greatly different from that of the third stage but people are much more careful about the manner in which they use the land.

The four stages of occupation and the time periods during which each stage could be found are:

Stage 1. The Aboriginal Stage - began about 30,000 years ago and ended during the early nineteenth century

Stage 2. The Pioneer Grazing Stage - began about 1820 and lasted until 1866

Stage 3. The Stage of Deteriorating Environmental Conditions - began about 1866 and lasted until 1900

Stage 4. The Stage of Family Sheep Farms - began in 1900 and still exists today

From these stages you can see that the Aborigines occupied the land for many centuries. White settlement has only been found in the district for about 150 years and the changes in the environment caused by the introduction of a new type of land use have been great in that time.

You will study each of the four stages in the remainder of this book. However, before the characteristics of each stage are discussed, it is important to know about the type of land, the climate, and the vegetation of the Back Lachlan District because it is probable that this district is very different to the area in which you live.

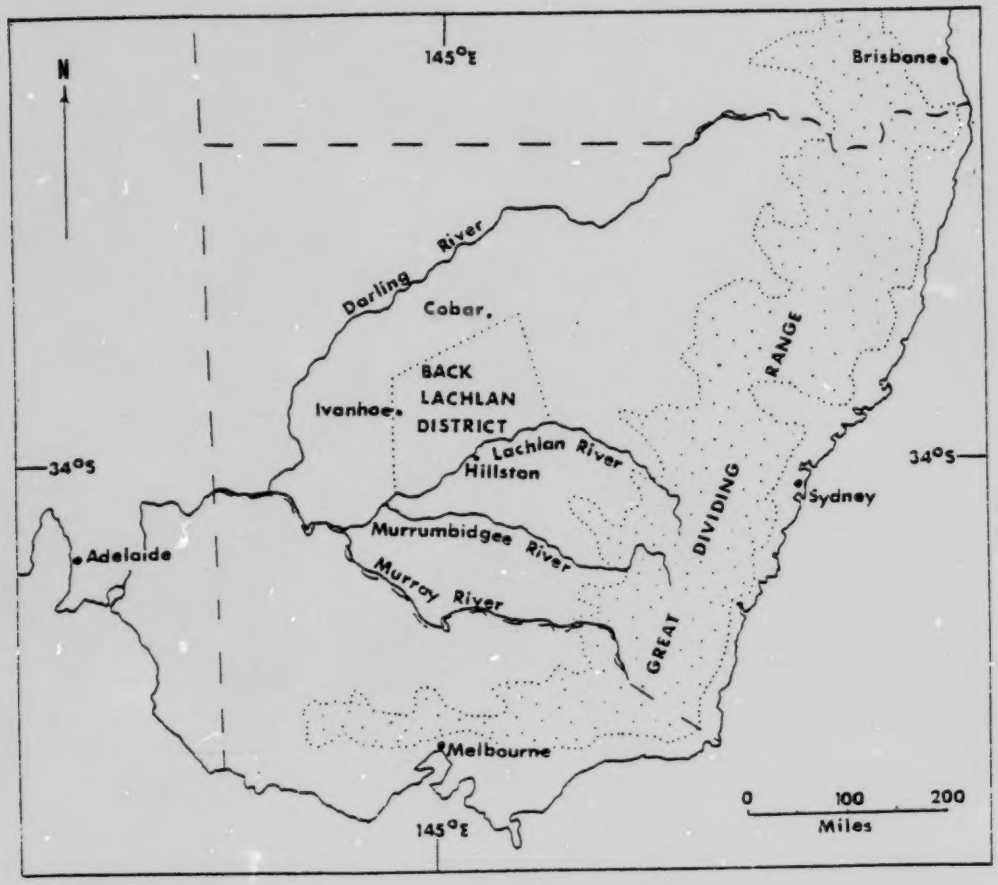

Figure 1

The Location of the Back Lachlan District in Relation to Southeastern Australia

What is the latitude and longitude of the Back Lachlan District? Describe the location of the Back Lachlan District in relation to the capital cities on the map. Where is the source of the Lachlan River?

Note: The broken lines indicate state boundaries. The Back Lachlan District and Sydney are in New South Wales. Brisbane is the capital city of Queensland. Melbourne is the capital city of Victoria. Adelaide is the capital city of South Australia.

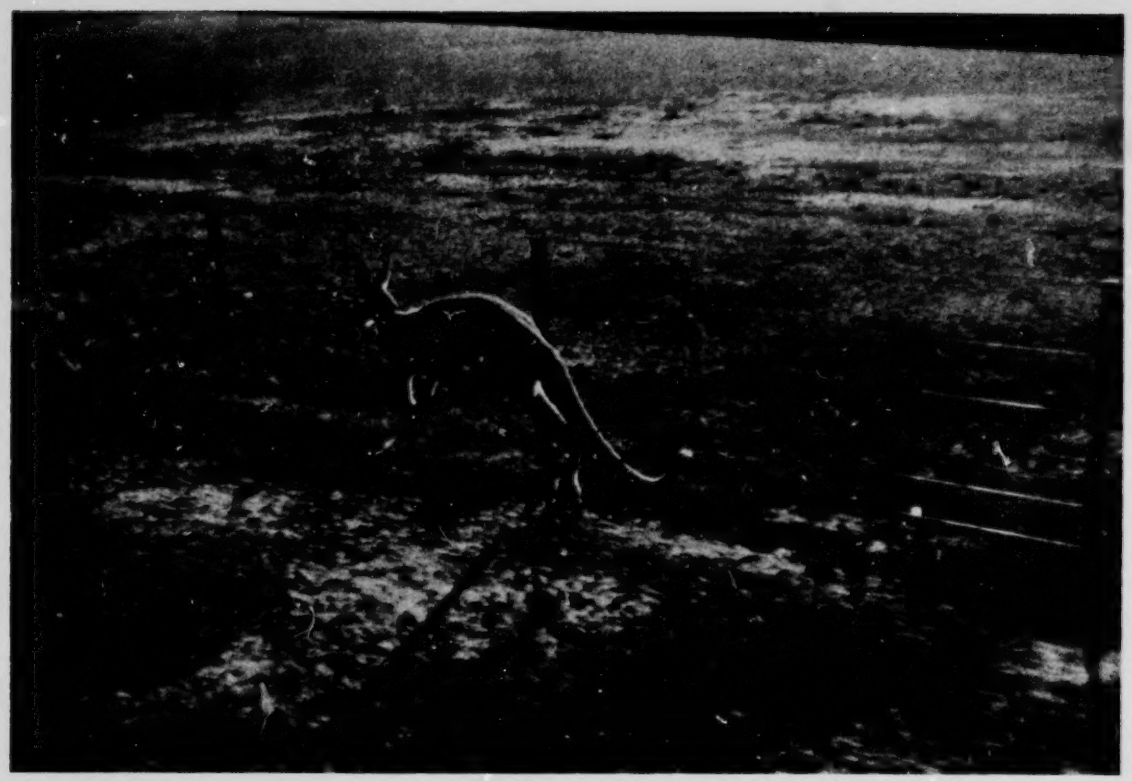

Figure 2. A Kangaroo Speeds Across the Plain

Kangaroos cause many problems for graziers in the Back Lachlan District. Often there are so many kangaroos in the area that there is not enough grass left for the sheep and cattle to eat. Sometimes kangaroos jump through fences such as you can see in this photograph and cause extensive damage.

Note the sparse vegetation of this area.

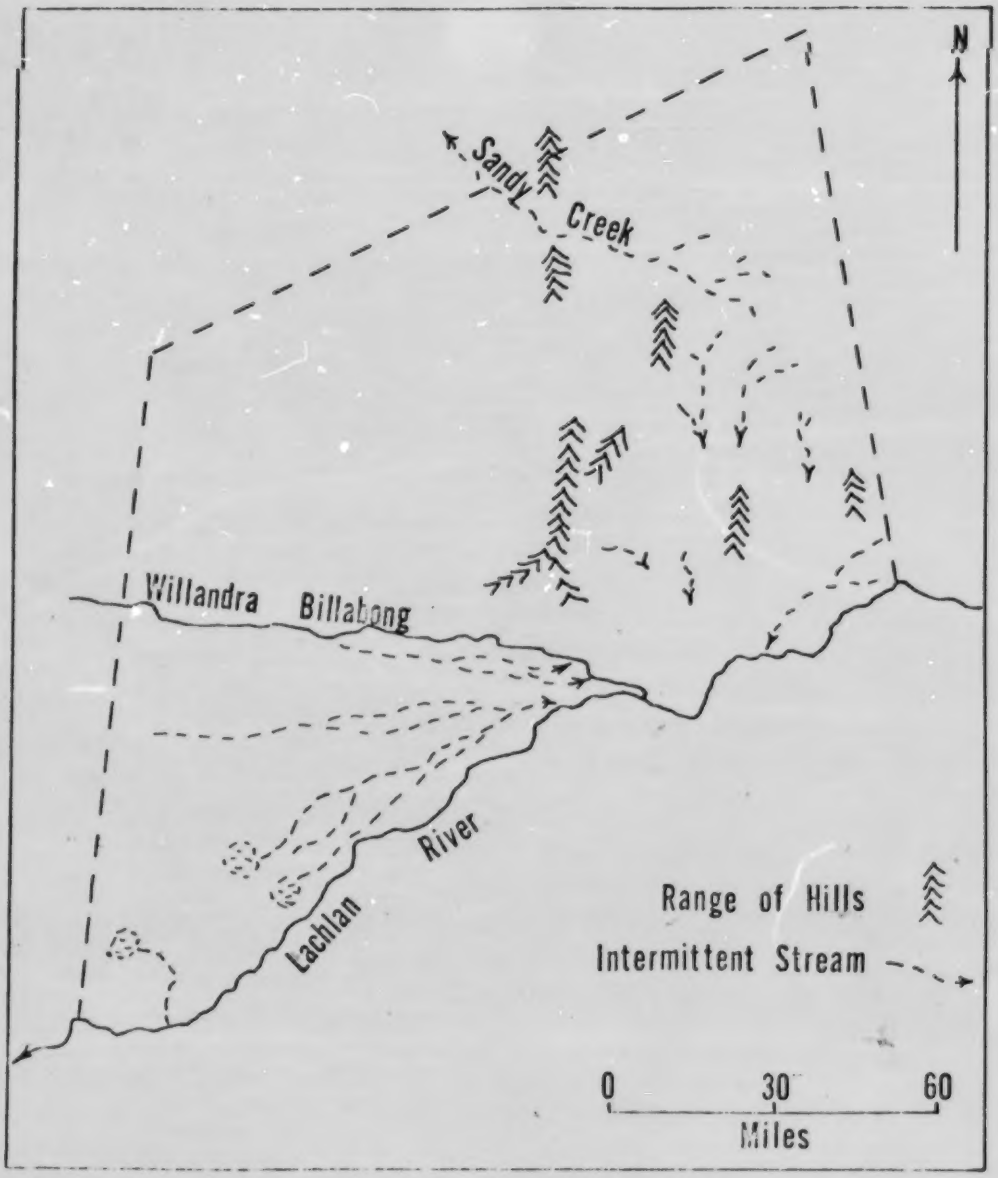

Figure 3. The Topography of the Back Lachlan District

Most of the district is a huge level plain but a few ranges of hills can be found. Describe the location of these ranges

What is meant by an intermittent stream? Why are numerous intermittent streams found in the Back Lachlan District?

Why can the Lachlan River keep flowing when other streams in the district dry up and cease to flow? Where does the water which is found in Willandra Billabong come from?

CHAPTER 1

THE PHYSICAL LANDSCAPE OF THE BACK LACHLAN DISTRICT

When we speak of the physical landscape we are talking about those features of an area which are the result of the work of nature. In this discussion of the physical landscape of the Back Lachlan District, the location, topography, climate, vegetation, and water resources will be described so that you can form a mental picture of the type of country you will be studying in later chapters.

Location

The Back Lachlan District is the name given to an area of about 15,000 square miles which is located at latitude 34°S and longitude 145°E in eastern Australia. The district is found in the center of the state of New South Wales and contains the towns of Hillston and Ivanhoe. If you measure arcs of 350 miles from the cities of Sydney, Melbourne and Adelaide, you will have located the area we call the Back Lachlan District (Figure 1).

The southern boundary of the district is the Lachlan River which has its source in the Great Dividing Range about 300 miles to the east. This river plays an important part in the way of life of people in the Back Lachlan District for although it is a small river by world standards, it provides water for a large portion of the district. The district extends for about 100 miles north of the Lachlan River and, because it is on the side of the river farthest from the main areas of Australia's population, it is called the Back Lachlan District (Figure 3).

Many Australians call this type of area "the outback" or "the bush" because it is so far away from most modern facilities. The Back Lachlan District is also described as being "beyond the black stump." To many people the "black stump" is an imaginary place where sensible people never visit. So, to be "beyond the black stump" is to be in an inaccessible place where few people live.

Figure 4. Vegetation Types in the Back Lachlan District

The top photograph shows the shrub woodland of the eastern part of the district.

The bottom photograph is a scene of the grasses found in the southwestern part of the district. Can you see the windmill?

The trees in this photograph are pines growing on a slight rise.

Topography

The topography, or shape of the land, in the Back Lachlan District consists of one major landform, a vast level plain which slopes gently from east to west. This plain is about 400 feet above sea level. A number of low ranges of hills, up to 1,200 feet in height, rise above the general level of the plain (Figure 3).

The plain was formed by the distributaries of many rivers which once flowed into the area. As the water from the rivers evaporated, sands and fine gravels were left covering the surface. Today it is rare to find rocks in the Back Lachlan District except in association with the low ranges of hills.

The southern half of the plain consists of fine-textured alluvial deposits associated with present-day watercourses. To the north of the fine-textured soil is an area of coarse-textured alluviums which were deposited when the climate was wetter than it is now and when more streams flowed into the area.

Climate

The Back Lachlan District has a semi-arid climate. The further an area is from the coast, the drier it becomes. In the Back Lachlan District the eastern section has an average annual rainfall of 14 inches, while the western section only receives 11 inches. Not only is the amount of rainfall low, but it is variable. This means that in one year 3 inches of rain might fall, 7 inches in another, and 20 inches in another. Rarely does the area receive the average amount of rainfall. Usually the district experiences a number of years with below average rainfall followed by a few years of above average rainfall.

The probability of rainfall is the greatest between June and October (winter-early spring) and the least between February and May (late summer-fall). Summer rains tend to occur as heavy storms when up to an inch might fall. Winter totals are made up of more frequent lighter falls.

Drought is a frequent occurrence in the district. Severe droughts occurred in the years 1888, 1902, 1903, 1914, 1922, 1927, 1938, 1940 and 1944. Sometimes drought periods extend for a number of years, for example 1896-1903, 1913-1914, 1927-1929 and 1938 to 1944.

Because the area is far from the moderating influences of the ocean, a continental pattern of temperatures is experienced. Temperatures are high in summer (November to February) with averages being between 85°F during the day and around 60°F at night. Winter temperatures are mild with night temperatures falling to around 40°F while in the day, temperatures rise to over 60°F.

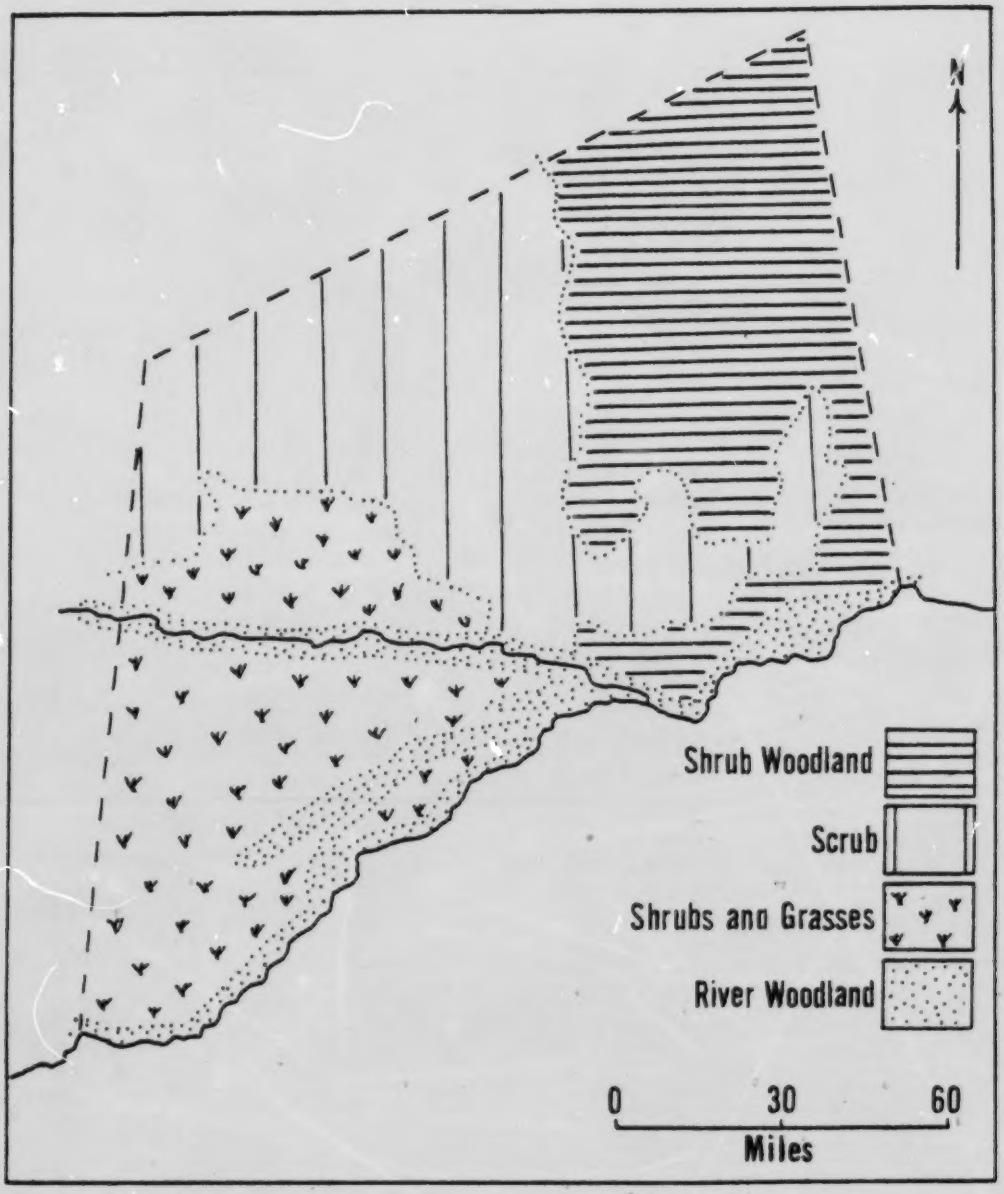

Figure 5
The Natural Vegetation of the Back Lachlan District

Describe the pattern of natural vegetation indicated on the map. What factors have produced such a pattern? If you were a grazier looking for land on which to establish a sheep or cattle property, which area would you select? Why would you make that choice?

During the summer, "heat waves" or times when the temperature remains around 100° F for many days in succession, are common. High temperatures evaporate most of the rain that falls and the relative humidity is low all year because there is little moisture present for the air to absorb. Because the district is far from the ocean, it is usually dry air that flows in.

Natural Vegetation

The natural vegetation varies from timber to grass and shrub. The vegetation that is found in an area depends upon the presence of water (Figures 4,5,6).

Trees are found along watercourses. If a watercourse is permanent the trees grow in greater numbers. If it is a seasonal watercourse, the trees are sparsely scattered along the banks of the creek. More trees are found in the east because the rainfall is slightly higher. The main type of tree found in the district is the gum, or eucalypt, tree. Many varieties of gum trees such as river gum and swamp box as well as some other species, such as white pine, are found (Figure 7).

In the south of the district, away from watercourses, shrubs and grasses are found. The shrubs grow to a height of about six feet. The grasses often grow in clumps, or tussocks, with patches of bare ground between.

Much of the northern part of the district is covered with scrub which grows to a height of 10 feet. The bushes grow close together and make it difficult for people to move through the area. Some grass grows under the bushes but usually the scrub has to be cleared before the land can be used for grazing animals.

Surface Water Resources

Surface water resources are very limited. Apart from the Lachlan River, which has its source in the better watered eastern Highlands of the Great Dividing Range about 300 miles to the east, all other streams are seasonal. The Lachlan River has more water flowing in it when it enters the district than when it leaves. This is due to the evaporation which occurs and to the effect of the effluent streams, or distributaries, found in the area. Effluent streams work in a manner opposite to the usual tributaries associated with a river. Effluent streams take water from the main stream whereas tributaries bring additional water to it. Because of the low rainfall and great evaporation, very little water is added to the Lachlan River as it flows through the district. When the Lachlan River has a large quantity of water flowing in it as a result of good rainfall in areas hundreds of miles to the east of the district, some of the water enters the effluent streams such as Willandra Billabong, Mirrool Creek and Merrowie Creek. These streams terminate in swamps such as Tom's

Figure 6. Vegetation types in the Back Lachlan District

The top photograph indicates the type of plain land which was once covered with shrubs and grasses. Today the shrubs are gone, the result of overgrazing and rabbits and only grass remains.

The bottom photograph is of the scrub country of the northern portion of the district.

Lake, Lake Waljeers and Lake Booligal (Figure 3).

In the northern half of the district there are no permanent streams. Dry creekbeds are found in this area but they only contain water after heavy rainstorms. Sandy Creek flows to the northwest and eventually dries up before it reaches any major watercourse. Many other smaller streams flow out of the hilly country in the east of the area but these all dry up before they reach the Lachlan River.

Summary

The Back Lachlan District is located far from the more heavily populated areas of Australia. It consists of a huge level plain with a few ranges of hills, especially in the east.

The climate is semi-arid. Rainfall is low and variable and temperatures are high in the summer and mild in the winter. The natural vegetation varies with the availability of water. Trees are found in the east and near watercourses. Useless scrub covers much of the northern area. Grass and shrubs cover areas away from the watercourses in the south.

Only one river flows through the area. This is the Lachlan River which forms the southern boundary of the district. Other streams in the south take water from the Lachlan River and carry it over the vast plains to shallow lakes.

It is within the area described in this chapter that the human occupance and use of the land took place.

Figure 7. The Lachlan River Downstream from Hillston

The level of water in the river is getting low and fallen trees are beginning to appear above the water level. Why would a river such as this be useless for transportation purposes?

The trees which line the banks are river gums.

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CHAPTER 2

THE ABORIGINAL STAGE - FROM 30,000 YEARS AGO UNTIL THE NINETEENTH CENTURY

Before the arrival of Europeans in Australia, groups of people called Aborigines occupied the entire continent. The Aborigines were descendants of people who had migrated from South-east Asia about 30,000 years ago when the level of the sea was lower, making it easier to get from what is now island to island. At the time of the European discovery of Australia approximately 300,000 Aborigines lived on the continent. The majority of the Aborigines lived in the more fertile coastal areas. In the arid interior of the continent, where food was more difficult to obtain, fewer people were found. Aborigines of the drier inland moved their camps more often and had a narrower margin of survival in bad seasons than the coastal Aborigines.

During the period when the Aborigines were the only people to occupy Australia, they were Stone Age hunters and gatherers. Their weapons and tools were limited. They used stone axes, wooden spears and boomerangs, and made bags from animal hair and plant fibers. In these bags they carried their belongings as they moved from place to place.

At the time of European contact, about 500 tribes of Aborigines lived in Australia. Each tribe was distinguished by its own particular culture and language. Each tribe occupied its own recognized territory which other tribes were forbidden to enter. Contact between tribes was uncommon because of the vast distances that separated them.

In the remainder of this chapter the characteristics of some aspects of the culture of the Aboriginal groups which were found in the Back Lachlan District will be discussed. To make this easier fo understand, six topics have been selected to help organize the information. These same topics will be used when describing the way of life of the Europeans who occupied the area after the first few decades of the nineteenth century. These

topics are:

Technology - all of the methods used by a group of people to provide objects and services necessary for their survival and comfort

Social Organization - the ways in which people are organized into groups

Economy - the way in which people organize themselves to provide goods necessary for their survival and comfort

Population - the number of people who live in an area and how crowded that area is

Settlement Pattern - the arrangement of groups of people living in an area

Transport and Communication - the ways in which people travel and keep in contact with each other

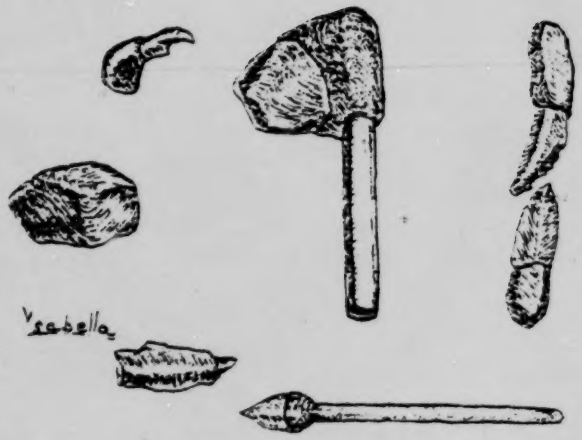
Technology

The way of life of the Aboriginal groups living in the Back Lachlan District at the beginning of the nineteenth century was very primitive. They wore no clothing except for woven grass tied around their waists. The climate was such that warm clothing was not necessary because winters were mild. Their nomadic way of life and lack of rain meant that there was no need for permanent shelters to be constructed. In wet weather the Aborigines chopped bark from a tree with their stone axes and made a rough shelter. In fine weather they made camp on the leeward side of a log or stacked some branches of trees to form a windbreak.

The Aborigines were Stone Age people. Many of their tools were made from stone or animal bones. Some stones were chipped to make a sharp edge, others were rubbed on another rock to produce a smooth blade. With the sharpened stones they chopped trees, cut bark, and cut up animals. Smooth stones were used for grinding grass seeds to make a type of flour which was mixed with water and cooked over an open fire (Figure 8).

Often Aborigines carried fire sticks with them as they moved about. Sometimes they rubbed sticks together to make a fire. Fires were important for cooking food, providing warmth, especially at night, and for driving animals out into open country. Fires set by Aborigines changed the vegetation that was found in the area.

The implements to the right were used by women. You can see a piece of bark which has been made into a tray, a string bag, a digging stick, and grinding stones which were used to make certain grass seeds into a type of flour.



Men's implements are seen in the the sketch on the left. You can see a stone axe head, part of the lower jaw of a small animal used for incising designs, a number of stone knives, a stone spear head attached to a shaft, and an axe head attached to a handle.

Can you match the names with the implements? What materials did the Aborigines use to make their implements?

Figure 8. Aboriginal Implements

Economy

The Aborigines lived a subsistence way of life, that is they hunted and collected only enough food to insure their immediate survival. Temperatures were too high to store any perishable foods and because of their nomadic life style, the less there was to carry, the better.

Food gathering groups were small and scattered and all members of a tribe rarely came together even for ritual meetings. After a successful day's hunting and gathering, the food was shared equally among all members of the group. Such cooperation was essential for survival in the harsh environment.

The men and women had distinctive roles in the division of labor. The men were the hunters. They hunted for kangaroos, emus, birds, goannas, and set traps or used spears to catch fish. Sometimes nets were made from reeds to catch fish and birds. Boomerangs and spears were used to kill larger animals. Extra power was given to the spear by using a woomera, or throwing stick (Figure 9). Aborigines were excellent hunters and had great skill in stalking and killing animals before they were aware that humans were nearby.

Women did most of the gathering. They collected seeds and berries from edible shrubs and dug up the edible roots of some plants. Grubs which lived in the roots and bark of some trees were also eaten. Most of the trees in the district, however, did not provide food. The food which the women collected was carried back to the camp in bark dishes or bags woven from grasses or animal hair (Figure 10).

The Aborigines had few personal belongings. When they moved to another area in search of food, the men carried their spears and boomerangs, while the women carried grass bags, bark containers and the young children.

Social Organization

The Back Lachlan District was inhabited by four tribal groups. Each group spoke its own language and had its own customs. The people of different tribes did not mix with neighboring tribes. The territorial rights of each tribe were respected, and if men from one group were found hunting in another group's tribal territory, a fight took place. Usually the Aborigines lived peaceful lives. They were too busy trying to obtain enough food for their groups to engage in large scale warfare.

A tribe, consisting of several hundred people, never hunted as a single group. Sometimes tribal members came together for ceremonial purposes, such as the initiation of the boys into

Figure 9. An Aboriginal Hunter

The man is carrying a small kangaroo which he has speared. In his hand is a stone-tipped spear and a woomera, or spear thrower. The woomera was used to launch the spear with greater force.

Figure 10
Aboriginal Women Gathering Grass and Searching for Grubs

The grass will be used for making string bags and cord to go around their waists.

In the lower drawing, the women are digging for witchetty grubs which are eaten alive.

manhood. Usually the tribe consisted of individual family groups wandering over the tribal territory. The family group was the food providing unit. It consisted of parents, children, and possibly grandparents, living as a cooperative unit, sharing the food and the work.

Population

The Aboriginal population of the Back Lachlan District was probably never more than 1,000 people. The numbers of people in the district varied with the season. In good seasons more people were found because food and water were more plentiful. In bad seasons, when food was scarce, the numbers of each tribe spread out over their entire territory in order to survive.

Settlement Pattern

The Aborigines did not construct permanent dwelling places. Temporary camps were located in an area where the chances of finding food were good. A reliable source of water was essential, so camps were commonly located not too far from rivers, creeks and water holes. Aboriginal camps, however, were never located next to the water supply because the presence of human beings would frighten the animals. Camps were located up to half a mile from water to make hunting easier.

Transport and Communication

The small size of the population and the lack of contact with other groups except on special occasions meant that there was no clearly marked system of trails crossing the district. The only means of transportation was by foot. No horses or animals suitable for use as a means of transport lived in Australia before European contact. Because Aborigines did not move from their tribal territory, boats were not used for transport. However, bark canoes were sometimes used for fishing.

Communications were primitive. The spoken language could only be understood by members of the same tribe. Sometimes fires were lit to indicate the movements of family groups around the tribal territory.

The small size of the population and the structure of the social groups meant that transport and communications were not as important to the Aboriginal way of life as they are to us today.

Summary

The Aboriginal stage of occupance was marked by the nomadic existence of small groups of people. These people were subsistence hunters and gatherers who wandered in search of animals and plants to eat. Their level of technology was that of Stone Age groups. The Back Lachlan District contained the territory of four tribal groups but each tribe did not hunt as a large group. Food collecting was done by small cooperative family groups. The population of the district was small and no permanent camps were established. Because each group was self-sufficient, transport and communication were not of great significance.

The environmental impact of the Aborigines mainly took the form of burning the natural vegetation. At the time of initial European contact this impact seemed slight, but when the Aborigines were forced from the district by white settlement, changes in vegetation began to occur due to the less frequent burning of the vegetation by the white settlers.

CHAPTER 3

THE PIONEER GRAZING STAGE - 1820 TO 1866

The eastern coast of Australia was first discovered by Europeans in 1770. An Englishman, Captain James Cook, sailed the length of the coast from south to north and claimed the land for Britain. The first European settlement was made in Sydney in 1788. This settlement was established as a place to which convicts were sent from England and it grew very slowly at first. Sydney seemed to be a good place for a convict settlement because it was surrounded by mountains which prevented easy escape.

By the early nineteenth century people were looking for a way across the mountains because more land was needed for the sheep and cattle which had been brought to the country. The mountains forming part of the Great Dividing Range were first crossed in 1813. It was not until 1817 that the first white man, John Oxley, and a party of soldiers and convicts crossed the Great Dividing Range and followed the Lachlan River to the Back Lachlan District. Oxley was disappointed to find a flat, featureless landscape which he described as "very barren" away from the river, and consisting of "rotten soils on which nothing grew."

A second exploratory expedition, led by Thomas Mitchell, reached the district in 1836. This expedition kept close to the main watercourses as had Oxley, but when the party left the riverbanks, Mitchell commented, "we rode thirty miles across soft red sand and saw neither a single watercourse nor the least indication that water had ever been present." Thus the first two groups of white explorers to visit the Back Lachlan District formed unfavorable opinions of its potential to support livestock. Neither group managed to get to the northern parts of the district (Figure 11).

It was not until the late 1850s that the northern portion of the area was first seen by white men. No attempt had been made to explore the area because it was thought that no water was available. However, once it was shown that it was possible to move through the area with cattle, the Back Lachlan District became a major stock route to the Darling River farther west.

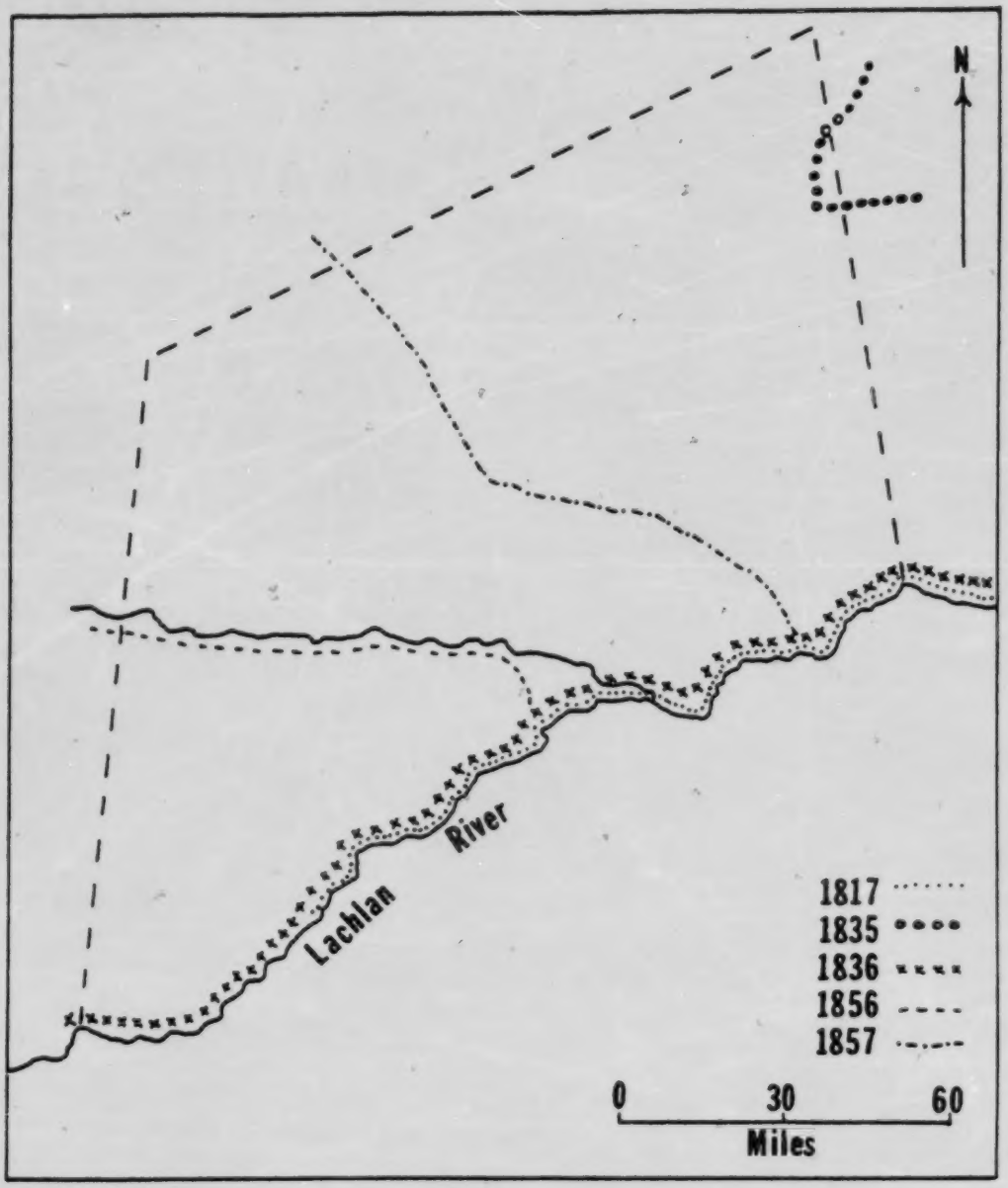


Figure 11. Exploration of the Back Lachlan District

Describe how the Back Lachlan District was gradually explored. Why was the northern portion explored later than the southern section?

Which explorer is associated with the following years?

1817_____ 1835_____

1836_____

The first Europeans to settle in the Back Lachlan District arrived in the early 1850s. These men were ranchers, who are called graziers in Australia. They reached the area by following the Murrumbidgee River to its confluence with the Lachlan and then turning north. They took up land along the major streams where a reliable water supply was available. The most favored stock of the pioneer graziers was cattle. Some sheep were brought into the area but cattle had a number of advantages at this time. Cattle did not need shepherds to take care of them. Cattle could walk farther to water and cattle were not bothered by dingoes, a type of wild dog, to the same extent as were sheep. The most important reason was the great demand for beef in the gold fields of Victoria during the 1850s.

Most of the cattle were not bred in the Back Lachlan District. They were brought from areas to the north, walked to the district and then fattened on the natural pasture before they they were walked to the southern gold fields. When the cattle were sold, new stock was purchased and the cycle began once more. The constant movement of livestock along the routes which followed the rivers resulted in the destruction of the pastures in these areas.

By 1866 all the land between the Lachlan River and Willandra Billabong had been settled. This was the better watered area and had the best pastures. The northern part of the district, which had scarce water resources, was settled on a seasonal basis or not at all. One stockman had to wait for six months before he could cross the Lachlan River and take his cattle to his property in the north because there was no feed available on it.

After 1860 sheep began to increase in popularity. This was due to a widespread outbreak of pleuro-pneumonia in cattle in southeastern Australia and the increasing prices for wool in European markets. Sheep also presented dual production possibilities; they could be raised for meat and for wool. The pioneer stage of cattle raising began to come to an end during the early 1860s and the scene was set for the next stage, that of extensive sheep grazing.

Technology

The pioneer grazing stage was marked by the replacement of stone age technology by one which had developed in western Europe. Certain innovations and adaptations were necessary, however, before western European grazing techniques could successfully operate in this new environment. The most important innovation was the provision of stock watering facilities which allowed the movement of stock away from river frontage land on a perma-

nent basis. Wells were sunk, and horses and steam pumps were used to draw water. From the Lachlan River and from some of the major creeks, channels were dug for distances up to 20 miles to divert water toward low-lying land. Earth tanks were constructed in an attempt to catch any rain that fell.

Fences were gradually accepted as a necessary part of the grazing scene. Properties ranged in size from 14,000 to 100,000 acres and the large size meant that fencing was a major expense. At first, boundary fences were constructed but as time went on, subdivision fences were also constructed. This allowed for better management of the pasture resources of each property. Fences were especially difficult to construct in treeless areas where the necessary posts and rails had to be transported long distances. Wire was not used for fencing until the 1880s.

Economy

The economy of Australia at this time relied heavily upon that of Britain. Most manufactured goods were brought to Australia from England and the shipping companies were looking for goods to carry back. During the nineteenth century the textile industry of England was expanding. The demand for raw wool increased dramatically with the development of the factory system of production. The availability of cheap land in Australia appeared well-suited to the raising of sheep for wool and with a ready-made market and transport available, the Australian economy turned to wool as the major item of production.

In the Back Lachlan District most of the stock came from other areas in wetter parts of eastern Australia. The environment was too harsh for the successful growing of crops on a large scale. Although some fruit and vegetables were produced for local consumption and meat was obtained from the animals raised in the area, much of the provisions were obtained from Sydney and Melbourne. In some cases graziers purchased provisions in these two cities when they sold their stock or wool. This took place only once or twice each year. In an era before refrigeration there were great problems with storing food, especially during the hot summers.

Social Organization

The distance of the Back Lachlan District from the major centers of population in eastern Australia meant that the area was isolated from many of the events that were taking place. By 1860 Australia had become independent of Great Britain and had its own government. However, the Back Lachlan District was over 400 miles from Sydney by road. The journey by coach or on horseback could take two or three weeks across lonely bush tracks. Wagons would take twice that amount of time. Elected Parliamentary rep-

resentatives did not visit the area often and the district became a forgotten place to the people in the big cities.

The Back Lachlan district was settled by self-reliant people who kept to themselves. Very little land was purchased. Most of the graziers paid $20 each for a sufficient amount of land to graze 4,000 sheep or 800 cattle. Because they used the land on a yearly basis, some of the graziers did not take proper care of the land. They grazed too much stock on certain areas until the grass was eaten out.

Properties were fairly large because much land was needed to support the stock. Many properties did not have a permanent supply of water. Sometimes graziers leased land near the rivers as well as in the drier areas and moved their livestock from place to place according to the seasons. By 1860 most of the land was being used by graziers who were fairly wealthy. Unless a person had a large amount of money it was difficult to survive in the Back Lachlan District in the 1860s.

Population

In 1866 there were about forty grazing properties in the Back Lachlan District and the white population would have been between 500 and 1,000 people. Most of the people who lived in a pioneer area such as this were men. Very few women and children lived in an area which was so uncomfortable and isolated. Almost all of the men worked on the grazing properties looking after the cattle and the few sheep, and droving them to market when prices were high and the stock was in good condition. Pioneer settlers such as these men had to make most of the things that were needed for daily life. Stockmen needed to be able to shoe a horse, construct a fence, build a rough shelter, as well as to cook and mend their own clothing.

By 1866 most of the Aborigines had disappeared from all but the northern part of the district. They could offer little opposition to the coming of the white man. They had primitive weapons, lived in small groups and, at first, welcomed the white men as though they were their ancestors returned from the dead. As they were driven from their traditional tribal areas, however, many died of starvation because they were unable to enter the territory of another tribe. Many Aborigines died of European diseases such as smallpox, influenza and measles because they had never come in contact with such illnesses and had no natural resistance to them. Although a few instances of Aboriginal attacks on isolated grazing properties occurred, the guns of the white settlers quickly stopped the Aborigines from reclaiming their land.

Settlement Pattern

The dominant settlement pattern was associated with the individual grazing properties. In most cases these properties contained a homestead and a series of isolated stockmens' huts scattered at strategic points, such as water holes (Figure 12). These buildings were constructed from local timber. They were roughly made and frequently had earthen floors. The furniture was made from saplings cut nearby. Life was difficult and not very comfortable.

In the early 1860s the district was poorly served by townships (Figure 13). Booligal was the largest settlement - it had two hotels, three stores, two butcher shops and several residences. This settlement had been established at the site of two punts which carried stock and supplies across the Lachlan River to the grazing land beyond. Hillston had a few stores and residences. These two towns were the only settlements in the district and were located on the southern edge. Hay and Condobolin, two larger centers, situated about 50 miles from the edge of the district, were the closest settlements.

Transport and Communications

From the time of the earliest grazing settlement, the Back Lachlan District was linked to regions long distances away. The early settlers had followed river courses for hundreds of miles to reach their land. They relied on produce which was obtained in cities 400 miles distant. The stock they fattened was obtained from breeding areas hundreds of miles away, as were the markets they supplied with meat. In the case of wool the market was Britain, over 14,000 miles away.

Roads were poorly developed both inside the district and linking it with other regions. Usually they consisted of routes which the stock followed along watercourses (Figure 13). Trees were cut down in places to allow wagons to proceed but the stumps remained in the road.

Summary

Between 1817 and 1866 land use in the Back Lachlan District changed from Aboriginal hunting and gathering to pioneer cattle raising by white settlers. Despite the early reports by explorers of the poor grazing conditions, graziers began to move cattle into the district from northern breeding areas and to use the district as a fattening area before the stock was driven to the markets in the south.

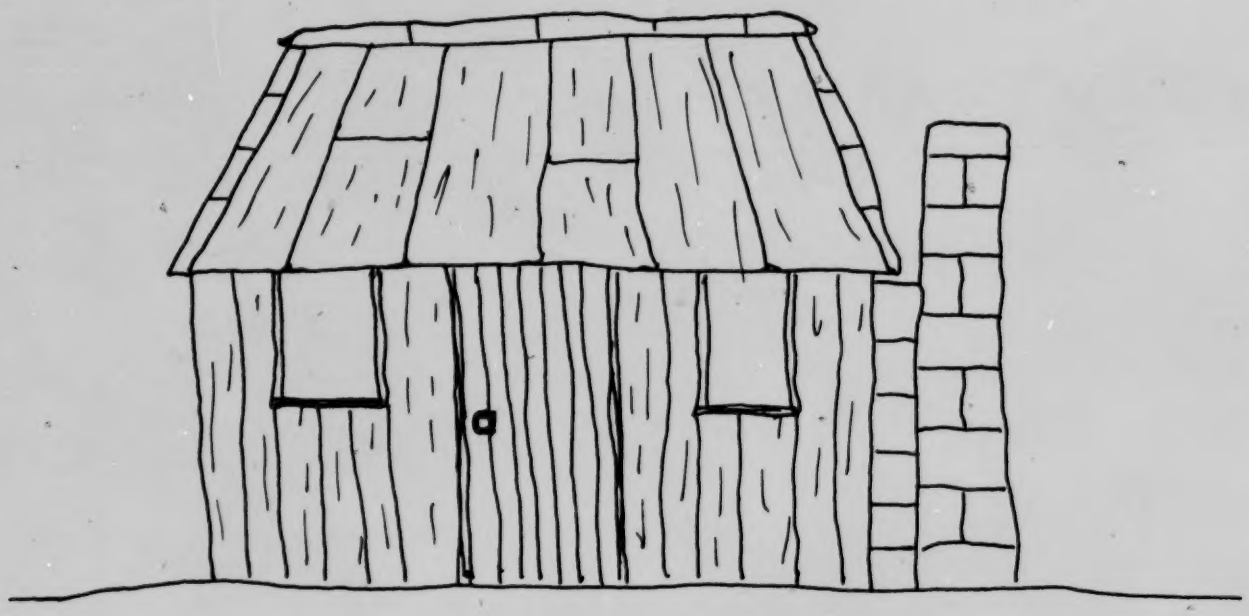


Figure 12. An Early Settler's Hut

During the first decades of occupation of the Back Lachlan District by white men, living conditions were very primitive. One room huts like this were used for sleeping, cooking, storing equipment and provisions. The huts were made from locally available materials and had earthen floors. What sort of building materials might have been available in an area such as the Back Lachlan District?

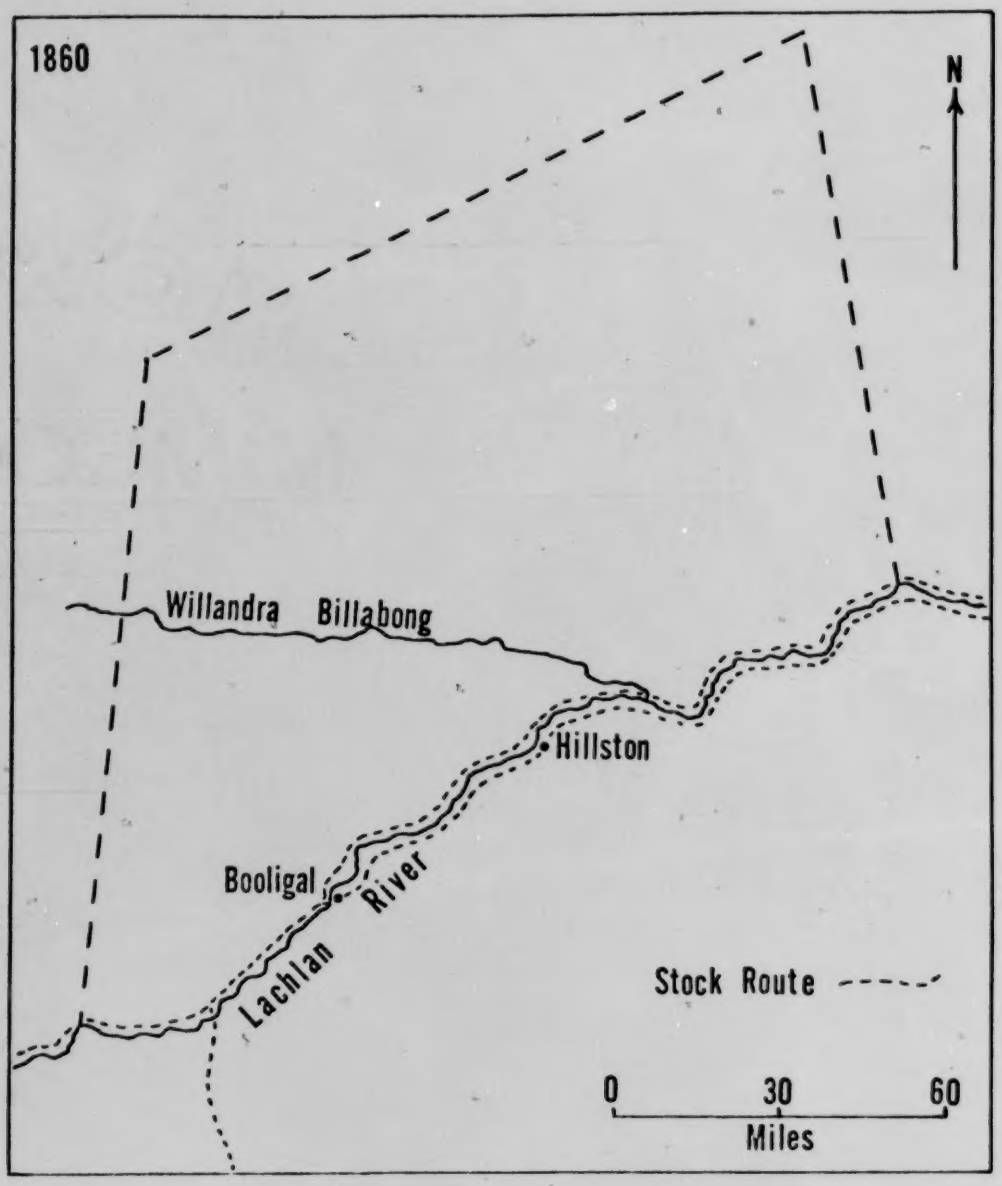


Figure 13. Transport Routes and Towns, 1860

Why do the stock routes closely follow the Lachlan River?
Why are no transport routes found in the north of the district?

CHAPTER 4

THE STAGE OF DETERIORATING ENVIRONMENTAL CONDITIONS 1866 TO 1900

The period between 1866 and 1900 was marked by a decline in the physical characteristics of the grazing environment. Areas of good pasture began to be replaced by plants that were inedible for cattle and sheep. It was not until 1890, however, that the seriousness of the situation was fully realized.

By 1880 all the land in the Back Lachlan District had been permanently settled. No longer were areas of vacant land found in the district, but settlement in areas away from the major watercourses was still risky because feed and water were often scarce. The graziers who lived on the back blocks of land knew about the problems brought about by the semi-arid conditions. The government still tended to be overoptimistic about the number of sheep or cattle the district was capable of supporting.

During the years between 1866 and 1900 the district became mainly an area for raising sheep. Cattle numbers stayed around 80,000, which had been the number in 1860. However, the number of sheep increased greatly. In 1866 there were about 350,000 sheep in the district, but by 1880 that figure had increased to almost 4 million. The main reason for the increase in the sheep population was the great demand for wool to supply the British textile industry in the years up to 1880. Graziers began to keep more and more sheep on the same area of land. After a while there were too many sheep. This meant that much of the natural pasture was destroyed. At the same time the price of wool began to fall. As wool prices fell, graziers tried to maintain their income by producing more wool which meant that they increased the number of sheep on their land. Eventually there were so many sheep that the land could no longer support them and between 1885 and 1900 millions of sheep were killed and boiled down to produce tallow for making soap and candles.

By 1900 the economic and environmental conditions were so severe in semi-arid areas, including the Back Lachlan District, that the government appointed a group of men to find out why the conditions had deteriorated. These men formed what is called a Royal Commission and they found that seven factors had brought about the sorry state of affairs. These were:

1. Both the government and the graziers had failed to accept the fact that frequent droughts were likely to occur in the district. The occurrence of droughts meant that the availability of feed and water was going to change from time to time. In some years many sheep could be supported on the land but in drought years, stock numbers had to be reduced because there was not enough feed available.

2. A plague of rabbits had entered the area about 1885. These animals destroyed much valuable feed, especially edible shrubs which were used to feed the sheep in times of drought. Graziers spent much money in trying to control the rabbits. Special fences, with wire mesh buried in the ground to prevent the rabbits burrowing under them, were built to stop the rabbits from spreading. Men were employed by the graziers to catch the rabbits in steel traps.

3. The government had overestimated the ability of the land to feed the stock. The rent which the graziers had to pay the government was based on government estimates of how many animals could live on an area of land. This meant that graziers were forced to overstock their properties in order to be able to pay their rent.

4. Sandstorms had buried grass and fences and had silted up tanks used to store water.

5. Scrub, which sheep and cattle could not eat, had begun to spread in the northern areas of the district. This occurred because of the less frequent lighting of fires. Aborigines who had lived in the area lit frequent fires. When white settlers forced the Aborigines from their tribal territories, fires occurred less often. This meant that certain shrubs began to reappear in the area.

6. The inaccessibility of the district and the great distance from the markets added to the costs which the graziers had to meet.

7. The profitability of the grazing industry began to fall as wool prices dropped. This meant that the graziers had less opportunity to cope with the problems mentioned above.

One great change which occurred as a result of these

factors was that huge areas of land came to be owned by banks and finance companies through repossession. Individual graziers had borrowed money from banks and finance companies to make improvements to their properties. When they could no longer make repayments of their loans, the banks and finance companies took over the properties and operated them. Some institutions controlled over one million acres of the Back Lachlan District.

Technology

In 1860 the grazing industry was basically a nomadic enterprise requiring a minimum of capital investment. Cattle were the most popular animal raised in the Back Lachlan District. By 1900 the grazing industry was based upon the raising of sheep for wool and large amounts of capital investment were necessary.

The buildings were much more substantial than the slab huts of 40 years earlier. The head station consisted of the main homestead, where the owner or manager lived, surrounded by outbuildings such as a kitchen, a store, a blacksmith's shop, shearing and wool sheds and shearers' huts.

The shearing shed was a very important building, although it was often roughly made. Inside the shed were pens where sheep could be kept overnight so that they would remain dry (Figure 14). When wet, sheep cannot be shorn because the wool will rot. Sheep were taken from the pens by the shearers who, using hand shears, cut the fleece off each animal in one piece. The wool was then pressed into bales weighing about 300 pounds and loaded on a wagon for the long haul to Sydney or Melbourne. From there it was shipped to England. In some dusty areas a washing plant was established to clean the wool before it was sent to market.

During this period, fences became much more important. In the early days of the industry the sheep were locked up in a fold each night and the shepherd took them out to graze each day. As time went on, it was difficult to find men who would do the lonely work of shepherds. Graziers began to find that the sheep did much better if they were allowed to find their own feed rather than being taken to a specific place to graze. However, before free grazing was possible, each property needed to be fenced. First, boundary fences, which consisted of wooden posts and wire strands, or of posts, rails and wire, were constructed. Later, subdivision fences were built to divide the property into paddocks. When this was done it was possible to control the grazing. Some fences were made of wire netting which was partly buried in the ground in an attempt to keep the rabbits out. In addition to fences, stockyards made of timber were constructed around the shearing shed. The construction of fences and yards on such large properties was very expensive.

Figure 14. A Shearing Shed and Stockyards

Corrugated iron was a very popular building material in treeless areas because the sheets could be transported flat and did not take up too much space on a wagon.

Note the sparse vegetation around the shed.

Another costly item for the grazier was the provision of stock watering facilities. Earthen dams were constructed across the few seasonal streams in the district but it was illegal for individuals to put a dam across the major rivers. Frequently, low-lying areas on properties were dug out to form earth tanks and it was hoped that water would drain into these tanks. A more important source of water than rainfall was discovered in the southern half of the district during this period in the form of underground and artesian water. Underground water needed to be pumped from the ground. At first, horses and steam pumps were used to raise the water. Later the steel windpump was introduced from the United States to get the water from the ground (Figure 15). Artesian water flowed out of the ground under its own pressure but costly bores had to be sunk to tap these water resources.

Economy

Emphasis during this period was placed upon the production of wool for the British market rather than on cattle as had been the case during the pioneer grazing stage.

The rising costs of production, partly brought about by the deteriorating physical conditions, and partly due to the need for greater expenditure on equipment and fences, led to the failure of many graziers. Some properties were taken over by banks and finance companies when the owners could not repay money they had borrowed to set up their properties. In other instances, properties were abandoned completely and left to the rabbits.

Graziers also had problems because the markets were over 14,000 miles away. Wool was sent to Sydney or Melbourne by wagon and then shipped to parts of England, a journey which could take six months. Once in England the wool was sold at auction but it was often another six months before the Back Lachlan District graziers were paid for their wool. During this time the graziers had to borrow money to survive. If the wool check was not as much as expected, graziers could not repay their debts.

Social Organization

A major political change occurred in 1884. The politicians in Sydney were unaware of many of the difficulties experienced in the Back Lachlan District. They thought that the graziers were a wealthy group of people with huge properties. The government made each grazier divide his land into two equal sections. The grazier could keep one piece but the other was to be made available for new settlers. This meant that the grazier had to raise the same number of sheep on half the area if he was to maintain his income at the same level. The result was over-

Figure 15. Windmill and Well

This well is located on the stock route from Hillston to Ivanhoe. Why are such water supplies necessary in the Back Lachlan District?

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grazing and a further deterioration of the physical environment. To add to this problem, the land which was available for new settlers was rarely occupied because sheep and cattle raising were becoming less profitable and the Back Lachlan District was too dry to grow crops. The unoccupied land became a breeding place for rabbits and weeds which spread to other properties.

The period ended with some hope for the future of the district. A series of newspaper articles published in the most important Sydney newspaper brought the shocking state of affairs before the general public. A passage from one of these articles said:

> "The area is a land of drifting desert sand and stone-strewn ridges, of treeless open plains, and dense impenetrable scrubs. It is the home of the treacherous mirage, of disappointing salt lakes and fleeting waterholes, of trying winds and exasperating dust storms. It is the stronghold of the rabbit, and the most frequent victim of the drought. It is, too, just now a land of buried yards and fences, of abandoned holdings and deserted homesteads, of broad acres, but tragically shrunken flocks."

This was the first time that many city dwellers were made aware of the difficulties of living in the area and pressure was put on the government to do something about the failure of settlement in the area.

Population

Between 1866 and 1900 the population of the Back Lachlan District rose and then fell. When the pioneer settlers proved that survival was possible, people were attracted to the area. By 1880 over 2,000 people lived and worked in the area. As the pioneer character of settlement changed and living conditions improved, more women accompanied their husbands to make a home in the Back Lachlan District.

The deteriorating physical conditions, falling wool prices and bankruptcy led to a decline in the population (Figure 16). By 1900 the population had fallen to slightly more than 1,000, which was no more than had lived a nomadic life there during the Aboriginal stage.

Settlement Pattern

The dominant settlement type was the individual homestead. The number of outstations began to decline as the number of fences increased. In 1883 there were 63 properties in the District. By 1900 this had fallen to 57. Most of these proper-

Figure 16. An Abandoned Homestead

Buildings such as this indicate the unsuccessful settlement of an area. This homestead is located in the northern portion of the Back Lachlan District. Why could you expect to find more abandoned properties in the north in hard times than in the south?

ties were between 25,000 and 75,000 acres in size. In 1880 more than half of the Back Lachlan District was owned by individual graziers or partnerships. The rest of the land was controlled by banks and finance companies. In 1900 banks and finance companies controlled 60% of the area, while individuals owned 40%.

Hillston had become the main settlement by 1900. Booligal was still a small village. A few more towns and villages had been established by this time. Ivanhoe had developed around a public well in the northwest corner of the district. Euabalong was a river crossing place. Nymagee and Mount Hope, in the east, developed as copper mining towns (Figure 17). Any settlement not situated on the Lachlan River had great difficulty obtaining a reliable supply of water. If underground water supplies were available they were not suitable for human consumption. Rainfall had to be caught in tanks or hauled long distances from the river. Mount Hope, fifty miles from the Lachlan River, was a three-day haul for the men and horses which carted the water.

Transport and Communications

Livestock routes within the district provided the most important element of the transport network. In 1860 only one major stock route existed and it followed the northern bank of the Lachlan River. By 1900 new stock routes heading north from Booligal, Hillston and Euabalong had been established. These routes crossed lonely, unwatered stretches of land and a system of tanks and wells was established along them to provide water for the stock (Figure 17).

The district relied heavily upon centers outside its boundaries for both supplies and markets. Coaches pulled by horses operated to the surrounding towns of Hay, Condobolin and Bourke, and these centers were linked to major coastal cities, such as Sydney and Melbourne. However, travel was slow and difficult, especially after rain when tracks were flooded and mud became a problem.

Summary

Between 1866 and 1900 land use in the Back Lachlan District changed from pioneer cattle grazing to the raising of sheep for wool. Many technological advances such as fences, stock watering facilities and buildings, took place and a grazing property needed a large amount of capital expenditure if it was to have any chance of success.

At the same time as the cost of operating a sheep property increased, the price of wool began to fall, the environmen-

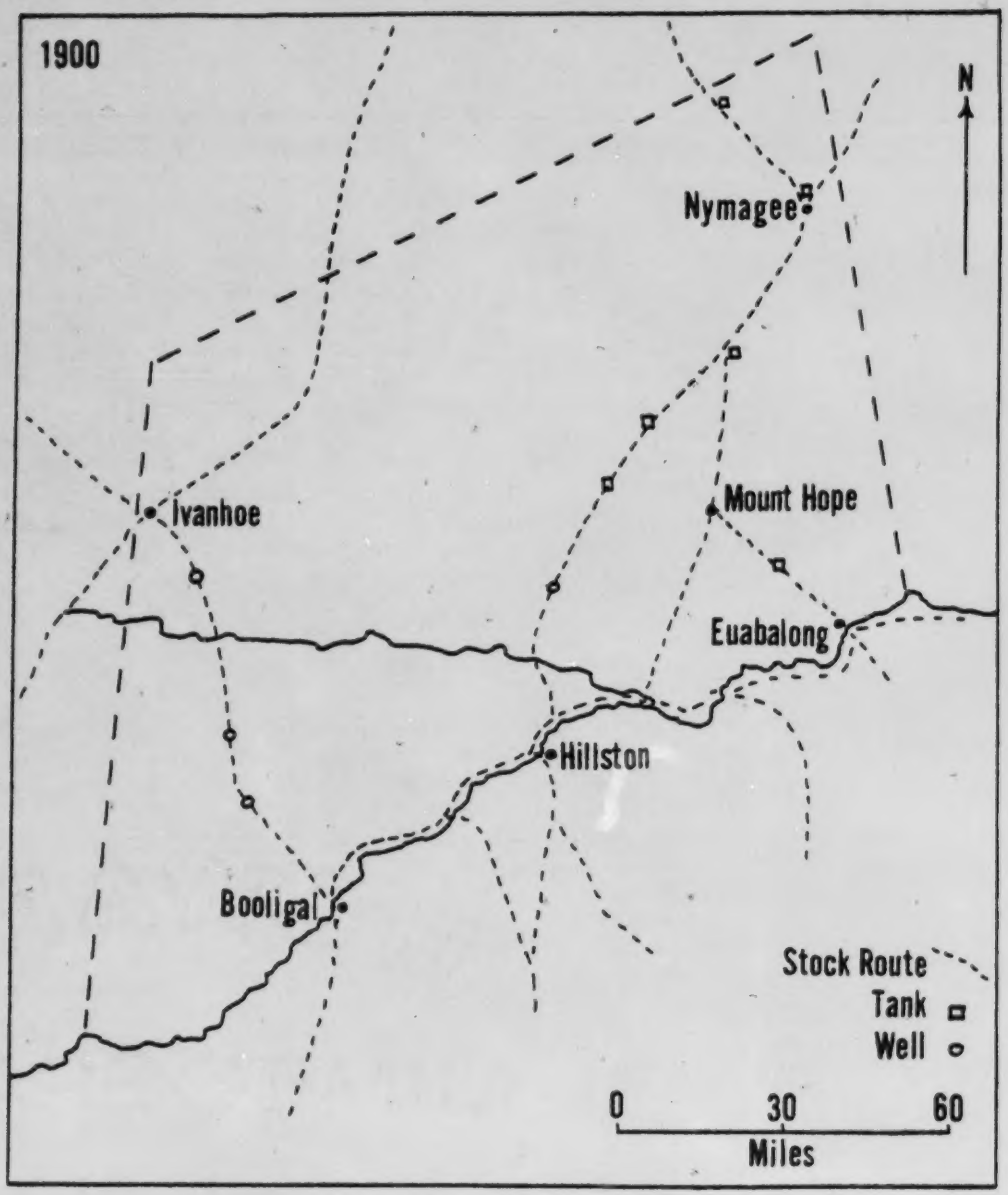

Figure 17. Transport Routes and Towns, 1900

Compare this map with Figure 13. Describe the changes in stock routes that occurred between 1860 and 1900. Why do you think these changes took place?

Why is it necessary to have tanks and wells located along stock routes? How far apart are the wells and tanks? What does this tell you about the distance that stock can travel without water?

Which stock route would have been a risky one to travel along in 1900? Why?

tal conditions began to deteriorate and rabbits became a great problem. In 1884 the government divided each property in half to make land available for new settlers but by 1900 less people lived in the Back Lachlan District than in 1880.

Although city dwellers were beginning to hear about the problems faced by graziers in a semi-arid environment, life in the Back Lachlan District was still lonely and the area was very isolated. The year 1900 saw more than half of the district in the hands of banks and finance companies and much of the land was unoccupied.

Figure 18. A Homestead Near Booligal

This property is located about 12 miles from the nearest village but most supplies have to be obtained from larger towns such as Hillston and Hay. In the photograph, identify the main homestead, the shearers' quarters, and sheds.

What does the photograph tell you about the water supply? What methods are used to obtain and store water? What does the photograph tell you about recreation activities? Describe the vegetation shown in this photograph?

CHAPTER 5

THE STAGE OF FAMILY FARMS - THE TWENTIETH CENTURY

During the twentieth century the links which had been established between the British textile industry and the Back Lachlan District were increasingly strengthened. New markets opened up in the mid-twentieth century when the United States of America, and then Japan, became important purchasers of Australian wool.

On the properties, wool was still pressed into bales by using human muscle power but the wool handling techniques in the major ports became much more efficient as machines were used in the loading and unloading procedures. Transportation of the wool became much faster as steam and diesel-powered ships replaced the old sailing ships of the nineteenth century. One of the most important changes in the wool industry was the development of selling centers within Australia. No longer was it necessary to ship wool to England before it was sold. Wool auctions were held in Sydney and Melbourne.

Until the 1960s most of the properties in the Back Lachlan District raised only sheep. Most of the sheep were merinos which were specially bred for the semi-arid conditions of the district. Since the 1960s there has been an increase in the number of properties which raise cattle as well as sheep. This has been done by graziers in an attempt to diversify production. If only wool is produced and the price of wool falls, then the graziers' income decreases. If cattle are also raised, however, chances are that meat prices will not fall at the same time as wool prices, so the graziers' income will not fall as much.

The grazier still relies mainly on native pastures to feed the stock. Along the major streams, irrigation has allowed crops such as wheat and improved pastures to be grown. All of these attempts to diversify production are important because wool prices have fallen since 1960 as the demand for synthetic fibers has increased.

Throughout the twentieth century, the government has followed a policy of breaking up the huge properties which existed around 1900 to provide farms big enough to support one family. Today properties average about 50,000 acres in size but are smaller if they have a river frontage (Figure 19). About 5,600 sheep and 150 head of cattle are found on an average property. Each sheep produces about 10 pounds of wool each year. The average property has about $200,000 invested in it. The land for the property takes about 40% of this amount and approximately 22% of the money is used to stock the property. Fencing accounts for over 11% of the total capital outlay.

There are two periods of the year when the grazier is particularly busy. These are at shearing time and lambing time. Lambing is generally timed to occur between April and August. Although this is the late fall-winter season, the native pastures are at their best at this time and the mild winter temperatures are not likely to have an adverse effect on the newly born lambs. Shearing is usually done after the lambing season. The grazier has to muster (round up) all his sheep and bring them to the shearing shed. He employs men to cut the wool from the sheep. Throughout the rest of the year the grazier must insure that his stock has enough feed and water and that fences are in good condition. Careful management of the property is done by moving stock from paddock to paddock to insure that the grass is not eaten out in any one area.

In the following sections you will learn how various aspects of the grazing industry have changed during the twentieth century.

Technology

The quality of sheep has improved greatly during the last eighty years. Special breeding programs have produced an animal that is much larger and heavier which means that more wool will be produced. Today's merino yields almost four times the amount of wool as the merino of an hundred years ago (Figure 20).

Great advances have been made in the way that the quality of wool can be determined. Graziers can now decide on the quality of wool they wish to produce and carefully breed their sheep to produce the desired grade.

In the shearing shed, machines have replaced hand clippers and shearers can now shear about 150 sheep each day. They are paid about $1 for each animal they shear. This makes shearing an expensive business and experiments are being carried out to remove the wool from sheep by chemical processes.

The stock horse which was once a common sight through-

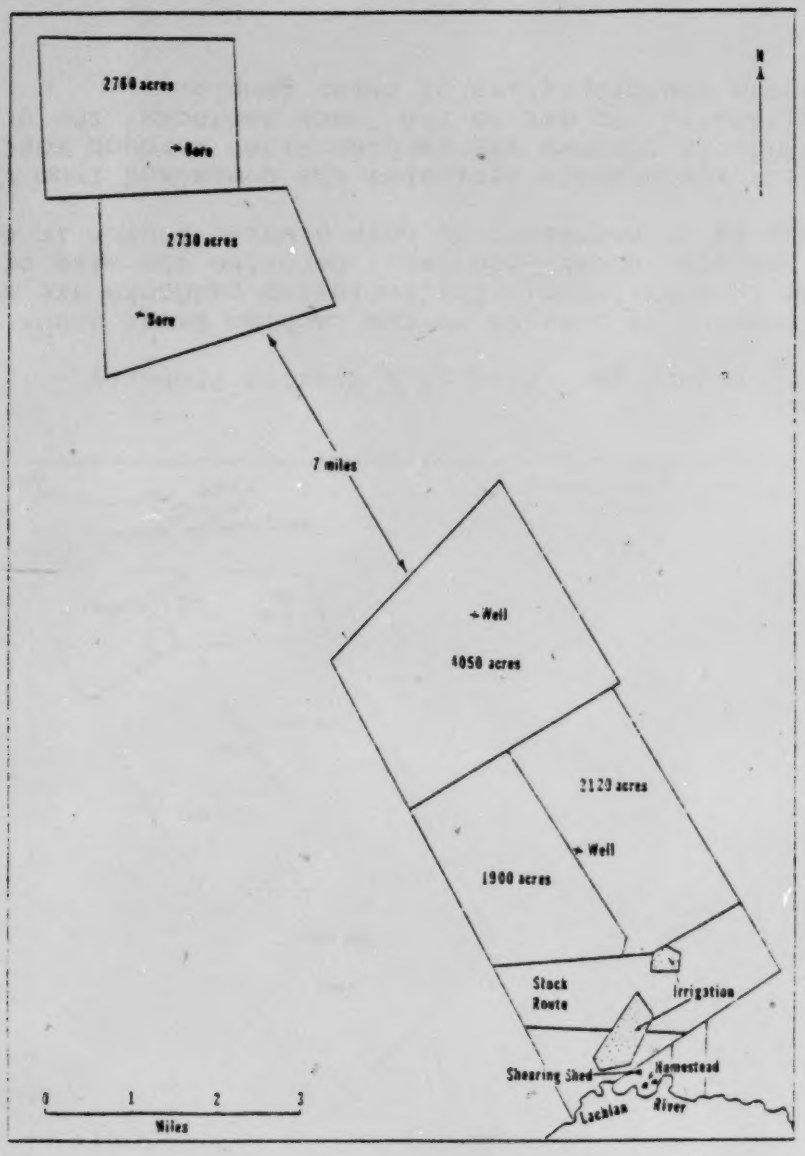

Figure 19. Plan of a Grazing Property

This property is located on the Lachlan River about 13 miles downstream from Hillston. The irrigated paddocks are used to grow improved pasture, wheat, and hay. Describe the size of the paddocks. Why is it necessary to have a water source in each paddock?

The stock route which separates the homestead from the main grazing paddocks follows the Lachlan River through most of the Back Lacklan District. To get to the "back paddocks" the grazier has to travel across the properties of other people.

Figure 20. Mustering Time

Rounding up sheep is most often done on motorcycle these days. Despite mechanization, the sheep dog is indispensible. When the dog is not working the sheep, he rides from paddock to paddock with the drover.

out the district is now rarely seen. Motorcycles and four-wheel drive vehicles are used for stock work. Specially bred sheep dogs are still important helpers for the grazier at mustering time.

Today paddocks are smaller and fences are made of steel, concrete posts and barbed wire. Each paddock has a permanent supply of water provided by a well, bore, earth tank or stream.

Living conditions are much better now than they were in the last century. Most homesteads have electric power although not all areas can receive television transmission because they are too remote. Despite the very hot summers, it is rare to find air conditioning in the homesteads.

During this stage, scientists succeeded in getting rid of most of the rabbits in the district. This was done biologically by introducing the disease of myxomatosis into the rabbit population. Fortunately, this disease does not affect humans. Today rabbits are no longer the great problem they were at the end of the last century.

Economy

Throughout the first half of the twentieth century the wool industry operated in a completely free market economy. Wool was sold at auction to the highest bidder. During the early 1950s wool prices rose to about $1 per pound as the United States built up its stockpile of wool. At this time graziers were very prosperous. They could afford to buy new cars and keep their properties in top condition. During the 1960s, wool prices began to fall drastically. In some instances graziers received only 25¢ per pound for wool. The government was forced to introduce a price support scheme which guaranteed a minimum price for certain grades of wool. Today graziers receive about 50¢ per pound for wool (Figure 21).

During the twentieth century, great advances have been made in the textile industry. Today synthetic, or man-made fibers such as polyester, nylon and acrylic, have replaced natural fibers, such as wool, in the production of many fabrics. This has meant that the demand for wool has fallen and has brought about the decrease in the price of wool.

Although many textile products are now made of a combination of natural and synthetic fibers, the grazier in the Back Lachlan District is worried about his future. The area is generally too dry to grow crops and is best suited to the grazing of animals. If the price of wool and beef continues to fall or remain at a low level, there is little else for which the land can be used.

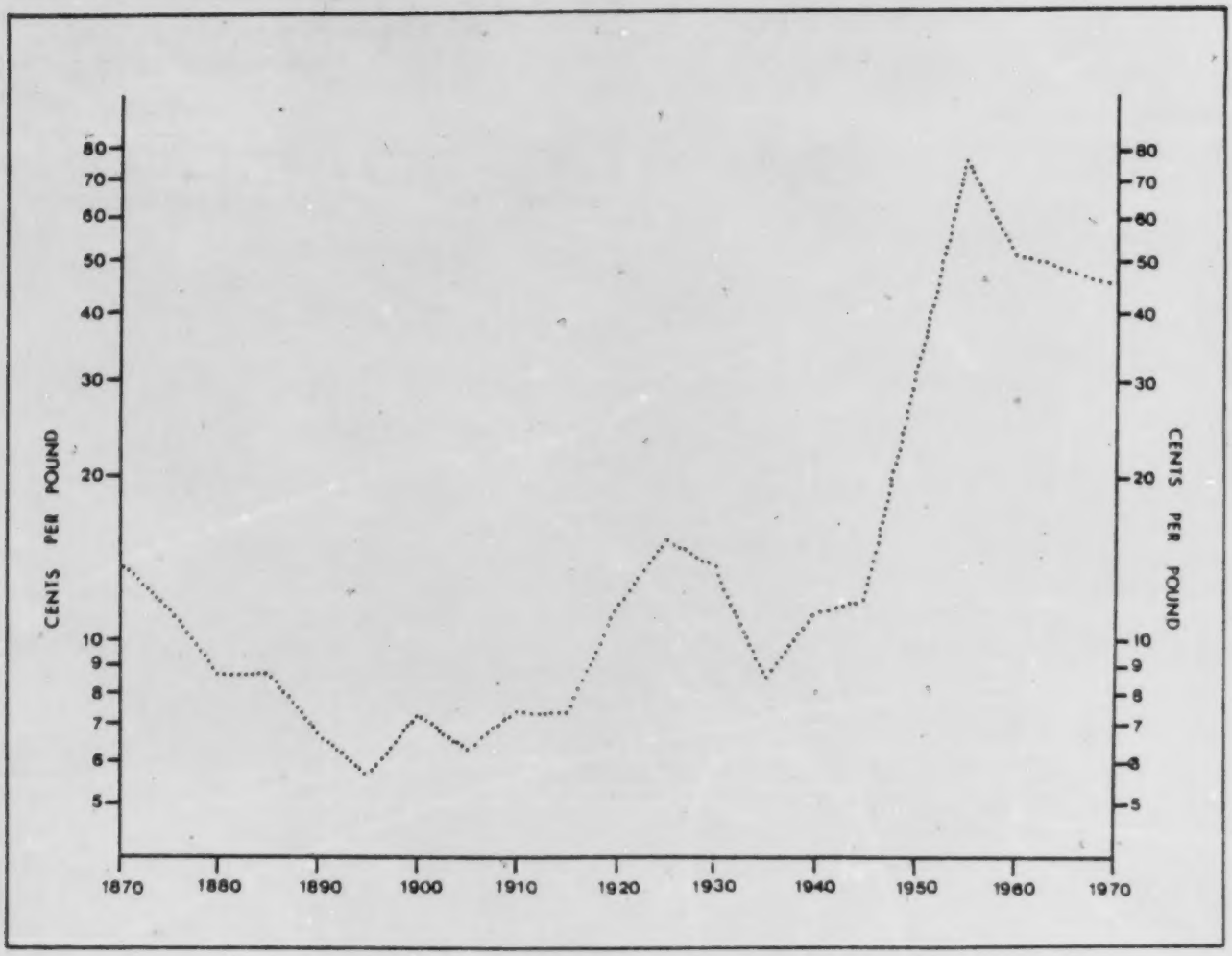

Figure 21. Average Prices Obtained for Wool, 1870-1970

Describe the way that wool prices have fluctuated since 1870. What reasons can you suggest for the changes that have taken place?

Comment upon the trend in wool prices since the early 1950s. Why do you think this has occurred?

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Social Organization

The government has divided up all of the large properties which were owned by banks and finance companies in 1900 and today the Back Lachlan District consists of many smaller properties based on an area sufficient to provide a living for a single family. Each property can be operated by family labor with the assistance of one hired hand, although shearers are employed during the shearing season. The result of the government policy of closer settlement is that there were six times the number of properties in existence in 1970 than there had been in the area in 1901.

The government has also appointed a special commission to control the semi-arid areas of eastern Australia. This commission insures that properties are not overstocked and that the grazing environment will not deteriorate.

It is no longer possible to buy land in the Back Lachlan District. All of the land is now owned by the government which leases it to individual graziers for 99 years.

Although more Australians are aware today of the problems of living in the Back Lachlan District and the difficulty of earning a reasonable income from wool production, few people have ever visited the area to see what conditions are really like. Life in the Back Lachlan District is still isolated from the mainstream of Australian life.

Population

Despite the increase in the number of grazing properties, very few urban centers are found in the district. About 2,000 people live in small towns and villages which are mainly located on the edges of the district. Another 2,000 people live on individual properties scattered over the district. This population of 4,000, although the largest number ever to occupy the district, still means that there are almost four square miles of land for every person living there.

The sex structure of the population has also changed considerably during this century. The family farm policy of the government and some improvement in living conditions has resulted in a more balanced ratio of males to females than existed in the nineteenth century.

Falling wool prices and the isolated living conditions have brought about a serious problem within the district - a lack of young adults. When children complete their high school education, they usually move from the district to large cities seeking further education or employment. Most of the property

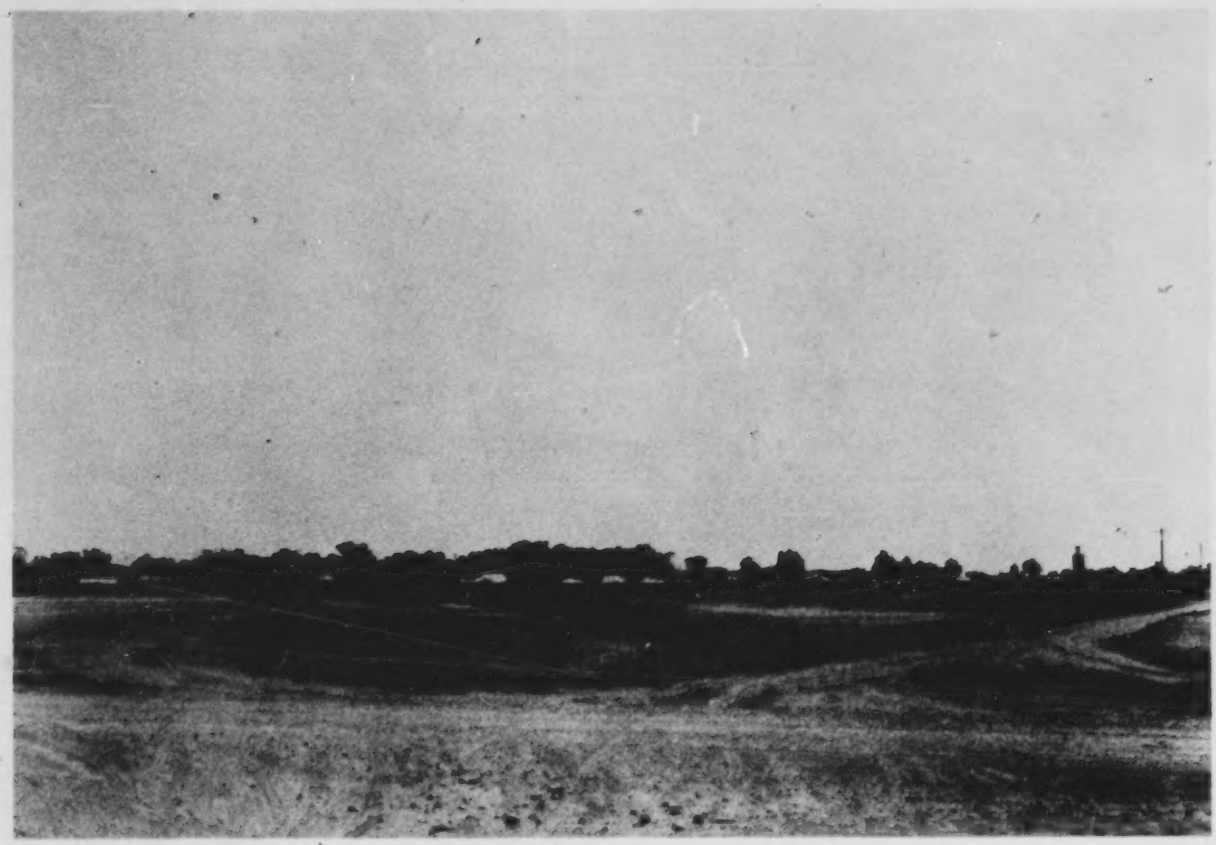

Figure 22. Hillston

This town has a population of about 1,000 and is the largest urban center in the Back Lachlan District. What services do you think Hillston provides for the district?

Comment upon the road surface.

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owners are over 40 years old and 12% are over 60 years of age. The implications of the older age of graziers are great and raise the question: who will take over the properties when the present graziers are too old to continue?

Settlement Pattern

The settlement pattern over most of the district consists of isolated homesteads. In the southern and eastern areas, the distance between homesteads is about five to ten miles. This reflects the better environmental conditions. In the northern areas the properties are larger and homesteads are further apart.

Urban development is limited. Hillston and Ivanhoe are the only settlements classified as urban and they have only 1,500 people between them. In 1971, Hillston had a population of 1,000 and Ivanhoe had only 500 inhabitants. The tiny villages of Mount Hope, Nymagee, Euabalong and Booligal have less than 100 people living in each (Figures 21,22,23).

Because of the small size of the urban centers in the Back Lachlan District, people tend to travel farther to larger centers for many of the non-perishable goods they need. The most important larger centers used by inhabitants of the Back Lachlan District are Griffith, Hay, Condobolin and Cobar.

Transport and Communication

The road network within the district has been greatly improved during this century (Figure 23). One major highway, the Cobb Highway, passes through the western part of the district from Booligal to Ivanhoe. Although it is unpaved for much of its length, most of the roads from the district to the larger urban centers have been paved within the past decade. Most secondary roads within the district are dirt and some are topped with gravel; after a rain most of these roads are impassable. Despite the rough and usually dusty nature of such roads, the most common form of transport is by motor vehicle. On a few of the larger properties, landing strips suitable for light aircraft are found.

Railroads are important in the area. The Transcontinental Railroad runs through the district and a branch line links Roto to Hillston. These lines connect the district with Sydney and most goods are brought in by rail (Figure 23).

Much of the district has been tied to the state electricity grid in the last ten years and television reception is possible in most areas. The telephone is a vital part of the communications system. Often, several properties share one telephone

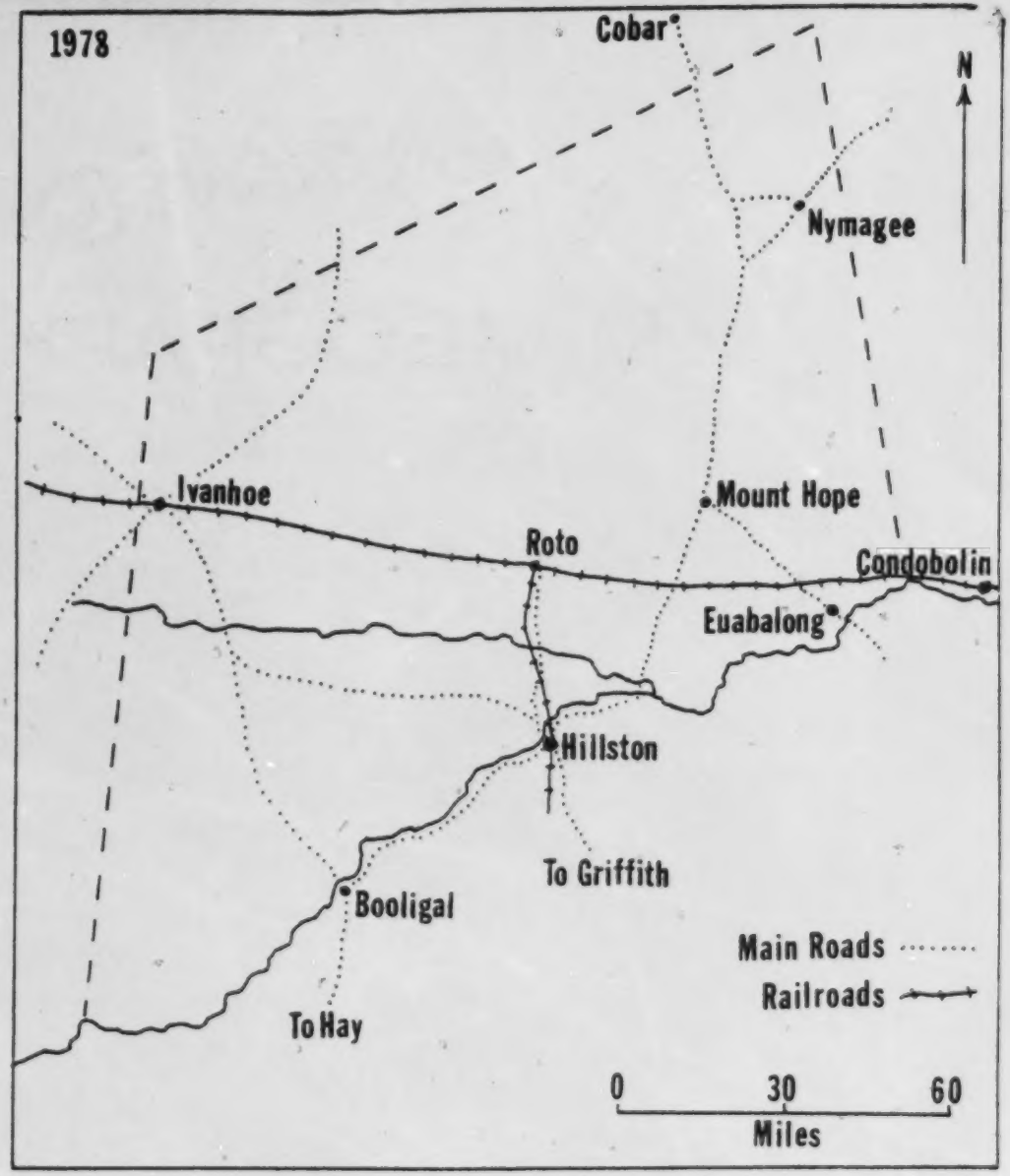

Figure 23. Transport Routes and Towns, 1978

This map does not show the stock routes that cross the district. These routes are similar to those in Figure 17.

Describe the pattern of main roads that exists in the Back Lachlan District. What reasons can you suggest for this pattern?

Describe the pattern of railroads found in the Back Lachlan District.

Look at an atlas map of New South Wales and see how the Back Lachlan District is linked to other areas.

line because of the great expense of running the cable long distances to remote areas.

Although most children in the district attend school each day, some northern areas are so remote that the children speak to their teacher daily by two-way radio.

Summary

During the twentieth century the large sheep-raising properties that existed at the turn of the century were subdivided into smaller properties which were designed to support a single family. The population of the district is greater now than it has even been although it is difficult to know if it will continue to grow.

Sheep are still the most important grazing animal but graziers are trying to diversify their production by introducing cattle and growing crops if conditions permit. The government, by introducing controlled stocking policies, has insured that the environment will not be allowed to deteriorate as it did during the third stage of settlement.

Although the Back Lachlan District is very much a part of an international trading economy, it is still isolated from the main centers of Australian society.

CHAPTER 6

UNIT SYNTHESIS

In this unit you have studied one area in semi-arid eastern Australia, the Back Lachlan District. You have read of the changes in land use that occurred in the district from the time when it was first inhabited by humans. Four stages of land use have been identified. The first stage lasted many thousands of years, the other three stages took place during the last 150 years.

During the Aboriginal stage, the land was used for hunting and gathering. Nomadic groups of Aborigines roamed the district in search of food which consisted of edible plants and seeds and animals such as kangaroos, emus, goannas and birds. The semi-arid conditions of the district meant that water was a valuable resource and the Aborigines never camped too far away from a water source. The level of technology of the Aborigines was low; their implements were made of stone, bone or wood and their way of life was dependent upon seasonal conditions.

The second stage of settlement began early in the nineteenth century when white explorers moved through the district. This stage of settlement did not become established until white settlers brought cattle into the district in search of new land with plenty of natural grasses. As more and more white settlers arrived, the Aborigines were forced into less desirable parts of the district, and then out of the district completely. Land use in the Back Lachlan District changed from hunting and gathering to commercial stock raising. In 1850 the district was midway between the cattle breeding areas in the north and markets associated with the gold fields in the south. Graziers brought cattle into the district and fattened them before moving them to the markets.

During the second stage of settlement, stone age technology was replaced by industrial technology, mainly from England and western Europe. The subsistence land use of the Aborigines

was replaced by commercial grazing which was aimed at making a profit.

During the third and fourth stages of settlement, sheep replaced cattle as the important grazing animal. The change from cattle to sheep was made in response to the demand for wool by the British textile industry. The features which distinguished the third and fourth stages were

1. the way in which people used the land

2. the size of the properties in the district

In the third stage, environmental conditions, especially the recurring droughts, were not fully understood. Frequently properties were overstocked and the native grasses were eaten out and destroyed, to be replaced by inedible scrub.

The pastoral resources of the Back Lachlan District had deteriorated to such an extent during the third stage that duststorms were frequent and much of the livestock died because of lack of feed. As the third stage drew to a close, properties grew larger as many were taken over by banks and financial institutions and operated in association with others owned by the same groups. During the fourth stage, a policy of conservation was introduced by the government. After 1900 the government decided that a close watch should be kept on the properties and care should be taken to insure that too much stock was not kept on each property.

Another important change was the development of family farms in the district. The huge grazing properties of 1900 were subdivided during the twentieth century to create farms which were large enough to support one family comfortably. Since 1960 conditions have not been easy for graziers raising sheep. Wool prices have fallen and there has been much competition from synthetic fibers in the textile industry. Many graziers today are trying to use their land for purposes other than raising sheep. This is difficult because the semi-arid conditions do not allow the growing of crops except with the use of irrigation or in eastern areas where there is slightly more rainfall. To some extent, cattle have been reintroduced to supplement the income received from wool production.

As you have studied you will have been aware that the greatest change in land use occurred between the first and second stages; from nomadic hunting and gathering to commercial grazing activities. Commercial grazing also dominated the third and fourth stages although, during this time, sheep replaced cattle as the dominant grazing animal.

What might the next stage be?

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GLOSSARY

Aborigines - the earliest inhabitants of the continent of Australia

alluvial deposits - see alluvium

alluvium - clay, silt, sand or gravel deposited by running water

artesian water - water that is located beneath the surface of the land. A bore is sunk to reach it and the water flows upward under its own pressure.

back block - those blocks of land that are a long way from any surface water source

bale of wool - a package of compressed wool, weighing about 300 pounds

billabong - a backwater of an inland river, sometimes returning to it and sometimes ending in sand. Except in flood times, it is usually a dried-up channel containing a series of pools or waterholes.

boiled down - the process by which excess sheep were slaughtered, placed in a boiler, and the fat which was recovered was used to make candles and soap.

boomerang - a weapon carved of wood which, when thrown, travels in an arc and returns to the thrower. Aborigines used boomerangs for hunting kangaroos and other small animals.

bore - a method of tapping artesian or sub-artesian water

capital investment - the amount of money needed to establish a business. In the Back Lachlan District, a capital investment consisted of buying land and animals, constructing buildings and fences, and establishing watering places for the stock.

closer settlement - the division of large properties to make smaller farms and thus increase the number of people living in the area

commercial stock raising - the breeding and raising of cattle or sheep with the intention of selling them for a profit

confluence - the point at which two or more streams meet

controlled stocking policies - a plan for maintaining the correct number of animals on a particular piece of land

convict - a person convicted of and under sentence for a crime. Many convicts were sent from England to Australia between 1788 and 1840 because British prisons were overcrowded.

deteriorating environmental conditions - the worsening of the physical state of the land

dingo - a wild dog that came to Australia thousands of years ago from Asia. It hunts rabbits and other small animals but will attack sheep and cattle if no other food is available.

division of labor - the way of dividing up and sharing work between members of a group of people

distributary - a river branch flowing away from the main stream

droving - the moving of a large herd of cattle or flock of sheep, sometimes over great distances

dual production possibilities - the possibility of obtaining two products from the same animal or the same piece of land

earth tank - an excavation usually made at the lowest point of a paddock in which rainwater is stored

effluent stream - a tributary of a river which takes water from the river rather than bringing additional water to it

extensive sheep grazing - the raising of sheep on large areas of land

family sheep farm - a sheep farm that is operated by a family group with limited use of outside labor

fleece - the wool obtained from a sheep at one shearing

free market economy - an economy operating with no government restriction

grazier - a rancher who grazes cattle or sheep

harsh environment - a difficult place in which to live because of the physical characteristics of the landscape

heat wave - a period when the temperature remains around 100°F for several days at a time

homestead - the building in which the family that operates a sheep station lives

inaccessibility of the district - the way in which the area is difficult to reach, usually because it is a remote area and transport routes are not well developed

intermittent stream - a watercourse which does not flow year-round. It usually contains water only after heavy rain.

international trading economy - a situation in which the goods from one country are exchanged for the goods of another country

irrigation - a system of taking water to the area where it is needed for the growing of crops or pasture

lambing time - that part of the year when lambs are born

land use - the way in which land is worked or utilized

merino sheep - a breed of large, fine-wooled white sheep

mustering time - the time when it is necessary to bring a herd of cattle or flock of sheep together in one area. This is particularly important at shearing time.

myxomatosis - a viral disease of rabbits spread by mosquitos. The disease was deliberately introduced by scientists in an effort to control the rabbit population.

natural habitat - a place where certain plants or animals naturally live and grow

natural resistance to disease - an inborn ability to fight off the effects of certain illnesses

natural vegetation - plants which grow naturally in an area; they were not introduced by man

New South Wales - one of the six states which make up the Commonwealth of Australia

nomadic way of live - to live like a nomad. A nomad has no fixed place of living but seasonally wanders from place to place in order to obtain an adequate amount of food.

overstock - to put more animals on a piece of land than can survive on it

paddock - a part of a farm that is enclosed by a subdivision fence

parliamentary representative - a person who is elected by the people of a district to represent them in the government of the state and the country

physical landscape/environment - the features of an area which are the result of the work of nature, including the shape of the land, the vegetation and the animal life

pioneer grazing - the first attempts by people to graze animals in an area

pleuro-pneumonia - an illness affecting the lungs

properties - sheep ranches or farms

provisions - a stock of needed materials or supplies, especially food

punt - a flat-bottomed boat having square ends, used to carry people, goods and animals across a river

repossession - the act of resuming possession of property when the purchaser fails to keep up payments on it

ritual meeting - a gathering for the purpose of performing acts

which have a special meaning to the group

river frontage land - land which has a river as one of its boundaries, or flowing through it

Royal Commission - a group of people engaged by the government to investigate a certain problem or state of affairs

scrub - vegetation which mainly consists of stunted trees and shrubs, often impenetrable and growing in poor soils

semi-arid area - an area which experiences light rainfall and high evaporation, but not as dry as a desert

sequent occupance - the identification of a series of stages of human usage of the land, including changes that have occurred in both the physical and cultural environment

shearing shed - a building in which wool is shorn from sheep and pressed into bales

shearing time - that part of the year when the sheep are shorn

sheep station - a large ranch where sheep are bred and raised, usually for their wool

shrub - a low, woody plant usually having several stems

slab hut - a hut made of slabs of bark

stage of occupance - the characteristics of a particular way of life of a group of people during a specific period of time

stock route - a path that is regularly traveled by herds of cattle or flocks of sheep moving from one place to another

subsistence way of life - the minimum amount of material goods which a person or group must have in order to survive

summer - the months of December, January and February in the southern hemisphere, where Australia is located

surface water resource - a supply of water that is found on top of the ground such as in a river or creek

synthetic fiber - material produced by man artificially and used for making cloth

tallow - the fat of sheep and cattle used in the making of candles and soap

territorial rights - the traditional ownership of a certain area of land

textile industry - the manufacture of cloth

topography - the shape of the land surface

tussock - grass bound together by roots

urban center - a town or city serving a certain region

well - a shaft dug in the ground to reach underground water

winter - the months of June, July and August in the southern hemisphere, where Australia is located

witchetty grub - an insect larva which is eaten by Aborigines

woomera - a throwing stick which gives extra power to a spear

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CHANGING LAND USE:

THE BACK LACHLAN DISTRICT OF AUSTRALIA

A Case Study of Land Use in a Semi-Arid Area

Student Work Book

by Kevin Laws

SØ011003

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May, 1978

FOREWORD

The workbook provides recall exercises to assist students master the content of the text relating to changing land use in the Back Lachlan District of Australia. These exercises are an application of Thorndike's laws of exercise and effect, which still remain significant aspects of effective teaching and learning. Mastery of the facts, concepts, and generalizations is a prerequisite to transfer learning.

The excitement of successful instruction nevertheless goes beyond the recall of specific concepts, facts, and generalizations based on a particular text. What is sought is transfer -- the ability to apply the knowledge to situations; to see relationships and order in new data using previously learned constructs; to make valid inferences from new situations applying principles of deduction and induction acquired in previous learning.

It is the teacher, familiar with the growth of pupils and the local community, who can most aptly extend the art of teaching through principles of transfer learning. While a curriculum developer can write recall exercises and contrive some opportunities for transfer, it is the alert teacher who forces students to apply knowledge to transfer situations.

The list of activities included under "Note To The Teacher" will assist teacher and student to devise activities which arouse their curiosity, reflect their interests, and permit them to apply principles of changing land use, studied in connection with the Back Lachlan District, to other places and other times.

It is not proposed that students will have the time to do all of the suggested or analogous activities, individually or as a class. It is recommended, however, that some of these or similar activities be utilized. Some are particularly adapted to individual, others to group work. The incorporation of such activities, however, will encourage students to extend concepts, facts, and generalizations learned in connection with the study of the Back Lachlan District of Australia to other places and other times. It is the practice of transfer learning that elevates specific learning to a wider intellectual horizon.

NOTE TO THE TEACHER

The systematic study of an area like the Back Lachlan District of Australia can lead to many transfer learnings. However, in most instances these must be initiated by the teacher. This workbook contains questions which relate specifically to the content of the textbook, but suggestions for additional activities which you may wish to utilize follow.

1. Choose a local area and identify the different types of land use that have occurred since human settlement began. Arrange the land uses into stages and specify the time periods during which each stage operated in the area. Identify the characteristics of each stage using the headings utilized in this unit if they are applicable. Try to find out why the different stages came about.

2. Make a comparative chart showing the stages of land use in the Back Lachlan District and the local area selected above. Other units in historical geography which form part of the Geography Curriculum Project could also be used in this comparison. These units are:

Changing Land Use: Peachtree Street, Atlanta

Changing Land Use: The Fens of England

They can be obtained from the Geography Curriculum Project, Dudley Hall, University of Georgia, Athens, GA 30602, U.S.A.

Questions to be asked after the comparative chart has been compiled include:

Did each go through similar stages? Why or why not?

What characteristics of similar stages were the same or different in each area? Why?

How long did each stage last in each area? Are these the same or different? Why?

3. Make a large map of the Back Lachlan District, and other areas, with overlays showing idealized land use by each of the periods.

4. The study of the Back Lachlan District can form a case study in such topics as:

The history of Australia

The Aboriginal culture of pre-European Australia

The impact of European settlement upon the original landscape

5. The Back Lachlan District also provides a sharp contrast to the overwhelming urban way of life found in Australia. Easily accessible articles on Australia, past and present, can be found in the following issues of The National Geographic Magazine:

December, 1956: Tasmania, Australia's Island State

September, 1963: 1. Australia: I. The West and the South. II. The Settled East, the Barrier Reef, the Center.

November, 1967: New South Wales, the State that Cradled Australia.

November, 1968: Queensland: Young Titan in Australia's Tropic North.

April, 1970: South Australia, Gateway to the Great Outback.

February, 1971: New South Wales, the State that Cradled Australia.

February, 1973: Eden in the Outback; Rock Paintings of the Aborigines; The Top End Down Under.

February, 1975: Western Australia, the Big Country.

May, 1978: Alone Across the Outback

6. Semi-arid areas in other parts of the world could be selected to see how humans make use of the land in those areas. Similarities and differences in land uses can be noted and explained. Examples could be chosen from northern and southern Africa, southwestern Asia, North America east of the Rockies, and South American east of the Andes.

In some regions the European influence is strongly felt such as in the Back Lachlan District. This is not always the case, however, and interesting comparisons can be made in the land use found in different regions of the world.

Suggestions for using the text and workbook. The following suggestions are offered as a result of classroom trials with similarly organized materials:

1. The students' attention should be drawn to the conceptual structure of Chapters 2, 3, 4, and 5. These chapters have been organized under the following concepts: technology, economy, social organization, population, settlement pattern, and transport and communication. The factual information contained in each chapter expands the students' understanding of each concept.

2. Vocabulary building is very important in this unit. Without knowledge of the word label of each concept contained in the unit, concept formation cannot adequately take place. For this reason the meaning of words and phrases are emphasized. You may wish to discuss unfamiliar words and phrases before the students begin their reading of the relevant sections of the text.

3. Explain to the students how you want them to answer the workbook questions. It is recommended that sentences should form the basis of most answers. It is often necessary to show the students how an answer needs to be constructed. Knowledge of the facts is not sufficient. It is necessary to teach students how to organize their evidence to answer the questions. Frequently more than one fact is required to adequately answer the question.

With questions whose answers take the form of filling in a chart, it is necessary to help the students choose the essential elements which comprise the answer in the initial stage of their work.

UNIT INTRODUCTION

1. Define, give examples, and use the following in oral or written sentences:

continent_____

_____

_____

natural habitat_____

_____

_____

isolated_____

_____

_____

habitation_____

_____

_____

occupation_____

_____

_____

Aborigines_____

_____

_____

physical environment_____

_____

landscape

pioneer grazing

deteriorating environmental conditions

sheep station

2. What do you know about Australia? List some of the things you think of when Australia is mentioned.

3. In which areas is most of Australia's population concentrated?

4. What is the name of the area you are going to learn about in this unit?

5. What are the four stages of occupation that form the basis of this unit?

Stage of Occupation	Time Period	Main Land Use
1.		
2.		
3.		
4.		

6. What reasons can you suggest for the lack of knowledge about the Back Lachlan District by white settlers during the nineteenth century?

7. What are some of the changes that took place which suggest a deteriorating physical environment during the third stage of occupation?

8. How long did the Aborigines inhabit the district?

9. How long has the district been inhabited by white settlers?

10. Why do you think the white settlers took over the land from the Aborigines?

CHAPTER 1

THE PHYSICAL ENVIRONMENT OF THE BACK LACHLAN DISTRICT

1. Define, give examples, and use the following terms in oral or written sentences:

physical landscape _____

_____

_____

nature _____

_____

_____

location _____

_____

_____

topography _____

_____

_____

climate _____

_____

_____

vegetation _____

_____

_____

water resources _____

2. Why is it necessary to know about the physical landscape of the area you are studying?

Location

1. Define, give examples, and use the following terms in oral or written sentences:

latitude

longitude

arc

Great Dividing Range

"the outback"

"the bush"

inaccessible

2. How large is the Back Lachlan District?

3. What is the location of the Back Lachlan District? Give its latitude and longitude as well as its relative location in eastern Australia.

4. What towns are found in the Back Lachlan District?

5. Why has the area been called the Back Lachlan District?

6. What is the "black stump?" Would you like to live "beyond

the black stump?" Give reasons for your answer.

Topography

1. Define, give examples, and use the following terms in oral or written sentences:

vast level plain _____

_____

_____

ranges of hills _____

_____

_____

distributaries of rivers _____

_____

_____

evaporated _____

_____

_____

alluvial deposits or alluvium _____

_____

_____

2. Describe the topography of the Back Lachlan District.

3. Why are alluvial soils found in this area when the climate is very dry and not many rivers flow through it?

Climate

1. Define, give examples, and use the following terms in oral or written sentences:

semi-arid_____

_____

_____

average annual rainfall_ _____

_____

_____

variable rainfall_____

_____

_____

probability_____

_____

_____

drought_____

_____

moderating influence of the ocean

continental pattern of temperatures

heat wave

succession

evaporation

relative humidity

absorb

2. Describe the amount of rain received in the Back Lachlan

District in a year.

3. Describe the seasonal pattern of rainfall in the Back Lachlan District?

4. Why do droughts often occur in the Back Lachlan District?

5. Describe the annual pattern of temperatures in the Back Lachlan District.

6. Why does the Back Lachlan District have low relative humidity all year round?

Natural Vegetation

1. Define, give examples, and use the following terms in oral

or written sentences:

shrub_____

_____

_____

permanent water course_____

_____

_____

seasonal water course_____

_____

_____

sparsely vegetated_____

_____

_____

tussock grasses_____

_____

_____

scrub_____

_____

_____

2. What are the four vegetation types found in the Back Lachlan District? In which part of the district is each found? Why?

3. What is the most common variety of tree found in the Back Lachlan District?

Surface Water Resources

1. Define, give examples, and use the following terms in oral or written sentences:

effluent stream_____

_____

_____

distributaries_____

_____

_____

tributaries_____

_____

_____

2. Describe the surface water resources in the north, south, east and west of the Back Lachlan District.

3. Why is the Lachlan River so important to the Back Lachlan

District when it is a relatively small river?

4. In which part of the Back Lachlan District are the surface water resources best for human habitation?

Summary

1. From your knowledge of the physical landscape of the Back Lachlan District, what do you think the land could be best suited for in terms of human land use?

CHAPTER 2

THE ABORIGINAL STAGE

1. Define, give examples, and use the following terms in oral or written sentences:

Europeans _____

_____

_____

descendants _____

_____

_____

migrate _____

_____

_____

fertile _____

_____

_____

arid interior _____

_____

_____

narrower margin of survival _____

_____

_____

technology _____

_____

_____

economy _____

_____

_____

social organization _____

_____

_____

population _____

_____

_____

settlement pattern _____

_____

_____

transport and communication _____

_____

_____

2. From where, and how long ago did the Aborigines come to Australia?

3. What is meant by "the Aborigines were Stone Age hunters and gatherers?"

4. How many Aboriginal tribes lived in Australia at the time of European contact? How was it possible to tell one tribe from another?

5. What was the basic difference between Aborigines who lived in coastal areas and those who lived in the drier interior?

Technology

1. Define, give examples, and use the following terms in oral or written sentences:

primitive_____

_____

_____

nomadic way of life_____

_____

_____

leeward side_____

_____

_____

fire stick_____

_____

_____

2. Why is the Aboriginal way of life described as being "primitive?"

3. Why did the Aborigines wear very little clothing?

4. What type of shelters did the Aborigines of the Back Lachlan District construct?

5. What two techniques were used by the Aborigines to make stone implements? How were the different types of stone implements used?

6. For what purposes did Aborigines use fire?

Economy

1. Define, give examples, and use the following terms in oral or written sentences:

subsistence _____

_____

_____

perishable foods _____

_____

_____

ritual meeting _____

_____

_____

division of labor _____

_____

_____

stalking _____

_____

_____

edible _____

_____

_____

2. What did Aboriginal men do as their part of the division of labor?

3. What did Aboriginal women do as their part of the division of labor?

4. Why was cooperation within a group essential for survival?

5. What implements did the men use for hunting?

6. What foods did the Aborigines eat?

7. What personal belongings did each Aboriginal group own?

Social Organization

1. Define, give examples, and use the following terms in oral or written sentences:

inhabited _____

territorial rights

tribe

initiation

2. How many Aboriginal tribes occupied the Back Lachlan District?

3. How could you tell one tribe from another?

4. How large was each tribe?

5. Did all the members of the same tribe live together? How did they live? Why?

Population

1. How many Aborigines lived in the Back Lachlan District before European contact?

2. Why did the number of Aborigines found in the Back Lachlan District vary from season to season?

3. During which season did the largest number of Aborigines live in the Back Lachlan District?

4. During which season did the smallest number of Aborigines live in the district?

Settlement Pattern

1. Define, give examples, and use the following terms in oral or written sentences:

reliable_____

_____

_____

temporary camp_____

_____

_____

2. Why did Aborigines not permanently occupy one place?

3. Where were Aboriginal camps likely to be found?

4. Why was the water supply so important to Aborigines who lived in the Back Lachlan District?

5. Why were the Aborigines' camps not situated right next to water supplies?

Transport and Communication

1. What was the principal means of transportation for the Aborigines?

2. Why did Aborigines use canoes?

3. Why was transport and communications less important for the Aborigines than it is for us today?

Summary

1. Define, give examples, and use the following terms in oral or written sentences:

level of technology_____

_____

_____

Stone Age_____

_____

_____

environmental impact_____

_____

_____

subsistence hunters and gatherers_____

_____

_____

2. Answer the following questions to give a description of

the major characteristics of Aboriginal land use.

What did they use the land for?

What implements did they use?

What jobs did the men do?

What jobs did the women do?

Why did they live in family groups?

How large was a family group?

3. What environmental impact did the Aborigines have upon the Back Lachlan District?

CHAPTER 3

THE PIONEER GRAZING STAGE

1. Define, give examples, and use the following terms in oral or written sentences:

convicts_____

_____

_____

very barren_____

_____

_____

exploratory expedition_____

_____

_____

potential of the land_____

_____

_____

grazier_____

_____

_____

confluence_____

_____

_____

shepherd _____

_____

_____

dingoes _____

_____

_____

natural pasture _____

_____

_____

dual-production possibilities _____

_____

_____

pleuro-pneumonia _____

_____

_____

extensive sheep grazing _____

_____

_____

pioneer grazier _____

_____

_____

2. When was eastern Australia discovered and who discovered it?

3. When was the first settlement established in eastern Australia? Why was it established?

4. Why was the Sydney area a good site for a convict settlement?

5. Why was more land required for settlement?

6. Why do you think the first explorers in the Back Lachlan District had such unfavorable opinions of the area?

7. What was the Back Lachlan District first used for by white men?

8. Why were cattle better animals for the pioneer settlers than sheep?

9. How did the first white settlers reach the Back Lachlan District?

10. Which part of the Back Lachlan District was settled first? Why do you think this was so?

11. When did sheep begin to become popular in the Back Lachlan District? Why do you think this happened?

Technology

1. Define, give examples, and use the following terms in oral or written sentences.

innovation _____

_____

_____

adaptation _____

_____

_____

river frontage _____

_____

divert _____

boundary fence _____

subdivision fence _____

pasture resources _____

2. Why did western European grazing techniques have to be changed before they could work in the Back Lachlan District?

3. What was the most important technological innovation for grazing settlement in the Back Lachlan District? Why do you think this was the most important innovation?

4. What did some graziers do to try to insure a reliable water supply on their properties?

5. How large were grazing properties in the Back Lachlan District before 1866?

6. How did the use of fences help in the better management of grazing properties?

Economy

1. Define, give examples, and use the following terms in oral or written sentences:

textile industry_____

_____

_____

raw wool_____

_____

_____

factory system of production_____

_____

provisions _____

2. Why did the Australian economy turn to wool production in the middle of the nineteenth century?

3. Why do you think the grazing of sheep became popular in the Back Lachlan District after 1860?

4. Where did graziers obtain their supplies? How did this create problems for those living in the Back Lachlan District?

Social Organization

1. Define, give examples, and use the following terms in oral or written sentences:

independent _____

parliamentary representative

self-reliant

leased

2. Why is the Back Lachlan District described as being isolated?

3. Did the graziers own their land? How did they get the use of the land?

4. Why did some graziers not look after the land wisely?

5. Why was a supply of water so important in the Back Lachlan District?

Population

1. Define, give examples, and use the following terms in oral or written sentences:

isolated _____

_____

_____

natural resistance to disease _____

_____

_____

2. How many white settlers lived in the Back Lachlan District in the period up to 1866?

3. How did these settlers take over the land from the Aborigines?

4. Why did many Aborigines die when they came in contact with white settlers?

5. Why did pioneer settlers have to do most things for themselves?

Settlement Pattern

1. Define, give examples, and use the following terms in oral or written sentences:

individual grazing properties _____

_____

_____

homestead _____

_____

_____

stockmen's huts _____

_____

_____

sapling _____

_____

_____

punts _____

_____

2. What was the main settlement type in the Back Lachlan District?

3. Why do you think it was necessary to have stockmen stationed around the property in the pioneer grazing stage?

4. Why were townships established near the Lachlan River? Give at least 2 reasons.

Transport and Communications

1. Why was the Back Lachlan District dependent upon areas far away? Name these areas and state what they did for the Back Lachlan District.

2. What sort of transport routes were found in the Back Lachlan District? Why were they found along water courses?

111

Summary

1. What were the major differences in land use between the stage of Aboriginal occupation and the pioneer grazing stage? Use the following headings to organize your answer.

	Aboriginal Occupation	Pioneer Grazing
Technology		
Economy		
Social Organization		
Population		
Settlement Pattern		
Transport and Communication		

CHAPTER 4

THE STAGE OF DETERIORATING ENVIRONMENTAL CONDITIONS

1. Define, give examples, and use the following terms in oral or written sentences:

pasture_____

_____

_____

inedible_____

_____

_____

back block_____

_____

_____

overoptimistic_____

_____

_____

boiled down_____

_____

_____

tallow_____

_____

_____

Royal Commission_____

_____

_____

wire mesh_____

_____

_____

rent_____

_____

_____

overstock_____

_____

_____

inaccessibility_____

_____

_____

profitability_____

_____

_____

2. By what year had all the Back Lachlan District been settled?

3. Where was settlement still very risky?

4. Why was there a big increase in the number of sheep found in the Back Lachlan District after 1866?

5. How did graziers try to maintain their income when wool prices began to fall? What problems did this cause?

6. What factors did the Royal Commission find that had brought about the decline in the physical environment of semi-arid eastern Australia?

7. How did banks and finance companies come to own huge areas of the Back Lachlan District by 1900?

Technology

1. Define, give examples, and use the following terms in oral or written sentences:

capital investment_____

_____

slab hut

shearing shed

fleece

bale

free grazing

underground water

artesian water

2. Why did buildings on grazing properties become more substantial during this period?

3. What type of buildings were found on a grazing property in 1880?

4. Why was the shearing shed so important?

5. Why were fences important on a grazing property?

6. What is the difference between underground water and artesian water? What has to be constructed to get the water from the ground in each case?

Economy

1. Define, give examples, and use the following terms in oral of written sentences:

auction_____

_____

_____

costs of production_____

_____

_____

debts_____

_____

_____

2. Why did the costs of production increase during this stage of settlement?

3. How did the fact that the wool markets were so far from the graziers cause problems?

Social Organization

1. Define, give examples, and use the following terms in oral or written sentences:

overgrazing_____

_____

_____

impenetrable scrub_____

_____

2. What political decision made the survival of the grazier even more difficult during the period 1866 to 1900?

3. How did this decision cause more problems?

4. Write your own description of the Back Lachlan District about 1900 based on the newspaper description contained in this section.

5. Why was a newspaper description such as the one contained in this section important to the graziers living in the Back Lachlan District?

Population

1. Define, give examples, and use the following term in an oral or written sentence:

bankruptcy_____

_____

_____

2. Why did the population of the Back Lachlan District rise and then fall between 1866 and 1900?

Settlement Pattern

1. Define, give examples, and use the following term in an oral or written sentence:

partnership_____

_____

_____

2. Was the main settlement type during this period the same as in the preceeding period?

3. Why did the number of properties in the Back Lachlan District decline after 1883?

4. How did more land come to be controlled by banks and finance companies after 1880?

5. What factor limited the establishment of towns and villages?

Transport and Communications

1. Define, give examples, and use the following terms in oral or written sentences:

transport network_____

_____

_____

stock route_____

_____

_____

2. Why were new stock routes established between 1860 and 1900? Which part of the Back Lachlan District was served by these new stock routes?

3. Transportation in the Back Lachlan District was difficult in times of drought and also after rain. State why this was so.

Summary

1. Describe the major features of land use in the Back Lachlan District in the period between 1866 and 1900.

2. On the next page you will find a chart. Fill it in indicating the major changes that occurred in the Back Lachlan District between 1860 and 1900.

	1860	1900
Technology		
Economy		
Social Organization		
Population		
Settlement Pattern		
Transport and Communication		

CHAPTER 5

THE STAGE OF FAMILY FARMS

1. Define, give examples, and use the following terms in oral or written sentences:

merino_____

_____

_____

diversified production_____

_____

_____

irrigation_____

_____

_____

synthetic fibers_____

_____

_____

capital outlay_____

_____

_____

2. What countries were important buyers of Australian wool during the twentieth century?

3. State some of the changes that occurred to the wool industry during the twentieth century.

4. Why are cattle as well as sheep now raised on most properties in the Back Lachlan District?

5. Why has the demand for wool fallen since 1960?

6. Describe the characteristics of a grazing property today under the following headings:

   Size_____

   Number of sheep_____

   Number of cattle_____

7. How much capital does a grazing property have invested in it and how is this capital distributed?

8. What are the two busy periods for a grazier? At what time

does each occur?

Technology

1. Define, give examples, and use the following terms in oral or written sentences:

remote_____

_____

_____

myxomatosis_____

_____

_____

2. How has technology improved the type of sheep found today in the Back Lachlan District?

3. How is wool removed from sheep?

4. How has technology changed the way in which the grazier runs his property, especially in the way he brings in the

the sheep for shearing?

5. How was the rabbit population controlled?

Economy

1. Define, give examples, and use the following terms in oral or written sentences:

free market economy_____

_____

_____

price support scheme_____

_____

_____

2. Why did the government have to introduce a price support scheme to help the graziers?

3. Describe how the price of wool has fluctuated during the twentieth century and give reasons for the fluctuation.

4. Why is the grazier in the Back Lachlan District worried about his future?

Social Organization

1. Define, give examples, and use the following terms in oral or written sentences:

closer settlement_____

_____

_____

family farm_____

_____

_____

2. What happened to the land in the Back Lachlan District during the twentieth century as a result of government policies?

3. Who controls land use in the Back Lachlan District?

4. How could you obtain land in the Back Lachlan District if you wanted to operate a sheep property?

Population

1. What is the population of the Back Lachlan District and how is it distributed?

2. How has the sex structure of the population in the Back Lachlan District changed during the twentieth century?

3. What two population problems exist today in the Back Lachlan District? What might happen in the future if these problems are not overcome?

Settlement Pattern

1. Describe the settlement pattern in the Back Lachlan District.

2. How is the population distributed between the two elements of the settlement pattern?

3. Describe the size of towns and villages of the Back Lachlan District.

4. What problems do the size of towns create for people living in the Back Lachlan District?

Transport and Communications

1. What is the most common form of transport in the Back Lachlan District today?

2. What kinds of roads would you expect to find in and near the Back Lachlan District?

3. How have communications been improved in the Back Lachlan District in the last two decades?

Summary

1. On the chart which begins below and continues on the next page, summarize the main features of the Back Lachlan District in the twentieth century:

Main Land Use	
Technology	
Economy	

Social Organization	
Population	
Settlement Pattern	
Transport and Communication	

	Aboriginal Stage	Pioneer Grazing	Deteriorating Environment	Family Farm
Main Land Use				
Time Period				
Technology				
Economy				
Social Organization				
Population				
Settlement Pattern				
Transport and Communication				